NOT MEASUREMENT SENSITIVE

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MILITARY STANDARD

CONFIGURATION CONTROL-ENGINEERING CHANGES, DEVIATIONS AND WAIVERS

AMSC N4478

AREA CMAN

FOREWORD

1. This military standard is approved for use by all Departments and Agencies of the Department of Defense.

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document, should be addressed to: Naval Air Engineering Center, Systems Engineering and Standardization Department (Code 53), Lakehurst, NJ 08733-5100, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

3. MIL-STD-480 delineates configuration control requirements and provides instructions for preparing and submitting proposed engineering changes and related information. Such changes require a complete analysis of the impact if the engineering change described by an engineering change proposal were implemented. MIL-STD-480 requires that the data package submitted with an engineering change proposal contain a description of all known interface effects and information concerning changes required in the approved functional/allocated/product configuration identification.

4. It is intended that MIL-STD-480 be imposed on Government activities, contractors, or subcontractors who: (a) have participated or are participating in the engineering or operational development of a system or high level configuration item, or (b) are being supplied with copies of the system specification and development specification(s). Such contractors have the capability of providing to the Government the majority of the information needed to properly evaluate the merits of an engineering change, possibly requiring significant changes to logistics support elements or involving interrelated changes in other configuration items. Normally, configuration control requirements imposed on major contractors shall be passed down to subcontractors.

5. MIL-STD-480 covers requirements for submittal of engineering change proposals, requests for deviations/waivers, notices of revision and specification change notices.

6. For contracts involving either multi-application items not peculiar to specific systems or procurement from a contractor who cannot reasonably be expected to know all of the consequences of an engineering change, MIL-STD-481 may be invoked. Such a contractor is one who is required to fabricate an item to a product configuration identification which they did not prepare, or one who did not participate in engineering development and hence is not familiar with requirements of the system or high level configuration item. When MIL-STD-481 rather than MIL-STD-480 is prescribed, the major portion of the analysis of the impact of an engineering change proposal on associated items is transferred from the contractor to the procuring activity.

7. This military standard implements the configuration control requirements of DoD Directive 5010.19, DoD Configuration Management Program.

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1. SCOPE

1.1 Scope. This standard establishes the requirements, formats, and procedures to be utilized in the preparation of configuration control documentation. Included are requirements for:

a. maintaining configuration control of configuration items (CIs), both hardware and software;

b. preparing and submitting Engineering Changes Proposals (ECPs), Requests for Deviations/Waivers (RFDs/RFWs), Notices of Revision (NORs), and Specification Change Notices (SCNs); and

c. evaluating, coordinating, and approving or disapproving ECPs, and RFDs/RFWs applicable to the Department of Defense (DoD), commercial or non-developmental items (NDI).

1.2 Purpose. The purpose of this standard is to establish configuration control requirements and procedures applicable to the acquisition and modification of items procured by the DoD.

1.3 Intended use. This standard shall be used by contractors and Government activities to:

a. establish and maintain effective configuration control of the approved configuration identification;

b. (1) propose engineering changes to CIs, both hardware and software which are designed, developed or modified for DoD activities; (2) request deviations or waivers pertaining to such items; (3) prepare NORs; and (4) prepare SCNs; and

c. control the form, fit and function of privately developed items used in CIs, including NDI items.

1.4 Application. Configuration control requirements established by this standard apply only to the functional, allocated or product configuration identification which has been approved by the procuring activity. Contracts which invoke this standard shall specifically identify those documents which establish the applicable baseline(s). The application of this standard may be tailored to avoid premature formal Government control. Class I and Class II are the only authorized classifications for ECPs.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the Department of Defense Index of Specifications and Standards and supplements thereto cited in the solicitation.

STANDARD

MILITARY

MIL-STD-109	-	Quality Assurance Terms and Definitions
MIL-STD-280	-	Definitions of Item Levels, Item Exchangeability, Models and Related Terms
MIL-STD-483	-	Configuration Management Practices for Systems, Equipment, Munitions, and Computer Programs
MIL-STD-490	-	Specification Practices
MIL-STD-882	-	System Safety Program for Systems, Associated Sub-Systems and Equipment
MIL-STD-1388-1	-	Logistics Support Analysis
MIL-STD-1388-2	-	Logistics Support Analysis Data Element Definitions
MIL-STD-1520	-	Corrective Action and Disposition System for Nonconforming Material
MIL-STD-1521	-	Technical Reviews and Audits for Systems, Equipments, and Computer Software
DOD-STD-2167	-	Defense System Software Development

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those in effect on the date of the solicitation.

Cataloging Handbook H4/H8 - Commercial and Government Entity (CAGE)
DoD-4105.61M - Procurement Coding Manual

2.2 Order of precedence. In the event of a conflict between the text of this standard and the references cited herein, the text of this standard shall take precedence. Documents referenced in the above military standards are not invoked by this standard. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.3 Source of documents.

2.3.1 Government specifications, standards, and handbooks. Copies of the referenced federal and military specifications, standards, and handbooks are available from the Department of Defense Single Stock Point, Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099. For specific acquisition functions, these documents should be obtained from the contracting activity or as directed by the contracting officer.

3. DEFINITIONS

3.1 Definitions used. For the purpose of this standard, the following definitions apply:

3.1.1 Allocated Configuration Identification (ACI). Performance-oriented specifications governing the development of CIs, in which each specification:

a. defines the functional characteristics that are allocated from those of the system or higher level CI;

b. establishes the verification required to demonstrate achievement of its allocated functional characteristics;

c. delineates necessary interface requirements with other associated CIs; and

d. establishes design constraints, if any, such as component standardization, use of inventory items, and integrated logistic support requirements.

3.1.2 Administrative Contracting Officer (ACO). A contracting officer normally assigned to a contract administration office, whose primary responsibility is to administer the terms and conditions of assigned contracts to ensure contractor compliance with such terms and conditions, and to serve as a focal point between the contractor and the procuring activity on those matters requiring PCO advisement.

3.1.3 Baseline. A configuration identification document or a set of such documents formally designated by the Government at a specific time during a CI's life cycle. Baselines, plus approved changes from those baselines, constitute the current approved configuration identification. For configuration management purposes there are three baselines, which are established sequentially, as follows:

3.1.3.1 Functional Baseline (FBL). The initially approved documentation describing a system's or item's functional characteristics and the verification required to demonstrate the achievement of those specified functional characteristics.

3.1.3.2 Allocated Baseline (ABL). The initially approved documentation describing an item's functional and interface characteristics that are allocated from those of a higher level CI, interface requirements with interfacing configuration items, additional design constraints and the verification required to demonstrate the achievement of those specified functional and interface characteristics.

3.1.3.3 Product Baseline (PBL). The initially approved documentation describing all of the necessary functional and physical characteristics of the CI, any required joint and combined operations interoperability characteristics of a CI (including a comprehensive summary of the other service(s) and allied interfacing CIs or systems and equipments), and the selected functional and physical characteristics designated for production acceptance testing and tests necessary for support of the CI.

3.1.4 Code identification numbers. A five digit number listed in Cataloging Handbook H4/H8, Commercial and Government Entity (CAGE) code, which is assigned to activities that manufacture or develop items for the Federal Government. When used with an ECP number, the CAGE designates the contractor or Government agency assigning the ECP number. When used with a drawing number or part number, the CAGE number designates the design activity from whose series the drawing or part number is assigned. The CAGE code was previously called manufacturer's code, code identification number or federal supply code for manufacturers (FSCM) code.

3.1.5 Computer data base. A collection of data in a form capable of being processed by a computer.

3.1.6 Computer program. A series of instructions or statements in a form acceptable to a computer, designed to cause the computer to execute an operation(s).

3.1.7 Computer software (or software). A combination of associated computer instructions and computer data definitions required to enable the computer hardware to perform computational or control functions.

3.1.8 Computer Software Configuration Item (CSCI). A configuration item for computer software.

3.1.9 Computer software documentation. Technical data or information, including computer listings and printouts, which documents the requirements, design, or details of computer software; explains the capabilities and limitations of the software; or provides operating instructions for using or supporting computer software during the software's operational life.

3.1.10 Configuration. The functional and physical characteristics of hardware, firmware, software or a combination thereof as set forth in technical documentation and achieved in a product.

3.1.11 Configuration audit. The verification of a CI's conformance to specifications, drawings and other contract requirements.

3.1.11.1 Functional Configuration Audit (FCA). The formal examination of functional characteristics of a CI, prior to acceptance, to verify that the item has achieved the performance specified in its functional or

allocated configuration identification.

3.1.11.2 Physical Configuration Audit (PCA). The formal examination of the "as-built" configuration of a CI against its technical documentation to establish the CI's initial product configuration identification (PCI).

3.1.12 Configuration control. The systematic proposal, justification, evaluation, coordination, approval or disapproval of proposed changes, and the implementation of all approved changes in the configuration of a CI after formal establishment of its baseline.

3.1.13 Configuration Control Board (CCB). A board composed of technical and administrative representatives who approve or disapprove proposed engineering changes to an approved baseline.

3.1.14 Configuration identification. The selection of the documents to comprise the baseline for the systems and CIs involved, and the numbers and other identifiers affixed to the items and documents. The approved documents that identify and define the item's functional and physical characteristics in the form of specifications, drawings, associated lists, interface control documents, and documents referenced therein. The configuration identification is developed and maintained through three distinct evolutionary increasing levels of detail, each used for establishing a specific baseline. The three levels of configuration identification are as follows:

3.1.14.1 Functional Configuration Identification (FCI). The approved functional baseline plus approved changes. (See 3.1.41.)

3.1.14.2 Allocated Configuration Identification (ACI). The approved allocated baseline plus approved changes. (See 3.1.1.)

3.1.14.3 Product Configuration Identification (PCI). The approved product baseline plus approved changes. (See 3.1.56.)

3.1.15 Configuration Item (CI). An aggregation of hardware, firmware, software, or any of its discrete portions, which satisfies an end use function and is designated for configuration management. CIs may vary widely in complexity, size and type, from an aircraft, ship or electronic system to a test meter or round of ammunition. During development and manufacture of the initial (prototype) production configuration, CIs are those items whose performance parameters and physical characteristics must be separately defined (specified) and controlled to provide management insight needed to achieve the overall end use function and performance. Any item required for logistic support and is designated for separate procurement is a CI.

3.1.16 Configuration Management (CM). A discipline applying technical and administrative direction and surveillance to:

a. identify and document the functional and physical characteristics of CIs;

b. audit the CIsto verify conformance to specifications, interface control documents and other contract requirements;

c. control changes to CIs and their related documentation; and

d. record and report information needed to manage CIs effectively, including the status of proposed changes and the implementation status of approved changes.

3.1.17 Configuration Status Accounting (CSA). The recording and reporting of information needed to manage configuration effectively, including:

a. a listing of the approved configuration identification;

b. the status of proposed changes, deviations, and waivers to the configuration;

c. the implementation status of approved changes; and

d. the configuration of all units of the CI in the operational inventory.

3.1.18 Contract. A legal agreement between DoD and industry, or a similar internal agreement wholly within the Government, for the development, production, maintenance or modification of an item.

3.1.19 Contract Administration Office (CAO). The Government office assigned responsibilities related to the administration of contracts at the contractor's plant.

3.1.20 Contractor. An individual, partnership, company, corporation, association or other service having a contract with the procuring activity for the design, development, manufacture, maintenance, modification or supply of items under the terms of a contract. A Government activity performing any or all of the above functions is considered to be a contractor for configuration control purposes.

3.1.21 Cost. The term "cost" means cost to the Government.

3.1.21.1 Non-recurring costs. One time costs which will be incurred if an engineering change is ordered and which are independent of the quantity

of items changed, such as cost of redesign, special tooling or qualification.

3.1.21.2 Recurring costs. Costs which are incurred for each item changed or for each service or document ordered.

3.1.22 Critical item. An item which, because of special engineering, procurement or logistic considerations, requires an approved specification to establish technical or inventory control.

3.1.23 Data. Recorded information, regardless of form or characteristics, including administrative, managerial, financial, scientific, technical, engineering, and logistics data, whether required to be delivered to the Government or retained by the contractor, as well as data developed by the Government.

3.1.24 Data Item Description (DID), DD Form 1664. A completed form that defines the data required of a contractor. The form specifically defines the data content, preparation instructions, format and intended use.

3.1.25 Defect. Any nonconformance from specified requirements.

3.1.25.1 Classification of defects. The enumeration of possible defects of a unit or product, classified according to their seriousness. Defects will normally be grouped into classes of critical, major or minor; however, they may be grouped into other classes, or into subclasses within these classes.

3.1.26 Deficiencies. Deficiencies consist of two types:

a. conditions or characteristics in any hardware or software which are not in compliance with the specified configuration identification; or

b. inadequate (or erroneous) configuration identification which has resulted, or may result, in CIs that do not fulfill approved operational requirements.

3.1.27 Design Change. A Government approved engineering change which modifies, adds to, deletes from or supersedes parts in a CI.

3.1.28 Design Change Notice (DCN). A DCN is a formal document prepared by a contractor or Government activity to notify the provisioning activity of a design change.

3.1.29 Deviation. A specific written authorization, granted prior to the manufacture of an item, to depart from a particular performance or design requirement of a specification, drawing or other document for a specific number of units or a specified period of time. A deviation

differs from an engineering change in that an approved engineering change requires corresponding revision of the documentation defining the affected item, whereas a deviation does not contemplate revision of the applicable specification or drawing.

3.1.30 Engineering change. An alteration in the approved configuration identification of a CI under development, delivered or to be delivered.

3.1.30.1 Class I engineering change. (See paragraph 5.1.)

3.1.30.2 Class II engineering change. (See paragraph 5.2.)

3.1.31 Engineering change justification code. A code which indicates the reason for a Class I engineering change. (See 5.1.3.)

3.1.32 Engineering change priorities. The priority assigned to a Class I engineering change, which determines the methods and resources to be used in review, approval and implementation. The priority will determine the relative speed at which the ECP is to be reviewed, evaluated, ordered and implemented, if approved.

3.1.32.1 Emergency priority. (See paragraph 5.1.5.1.)

3.1.32.2 Urgent priority. (See paragraph 5.1.5.2.)

3.1.32.3 Routine priority. (See paragraph 5.1.5.3.)

3.1.33 Engineering Change Proposal (ECP). A proposed engineering change and the documentation by which the change is described, justified, and submitted to the procuring activity for approval or disapproval.

3.1.34 ECP types. A term covering the subdivision of ECPs on the basis of the completeness of the available information delineating and defining the engineering change. They will be identified as preliminary or formal.

3.1.34.1 Preliminary ECP. (See paragraph 5.1.4.1.)

3.1.34.2 Formal ECP. (See paragraph 5.1.4.2.)

3.1.35 Firmware. The combination of a hardware device and computer instructions or computer data that reside as read-only software on the hardware device. The software cannot be readily modified under program control.

3.1.36 Fit. The ability of an item to physically interface or interconnect with or become an integral part of another item.

3.1.37 Form. The defined configuration of an item including the geometrically measured configuration, density, and weight or other visual

parameters which uniquely characterize an item, component or assembly. For software, form denotes the language, language level and media.

3.1.38 Function. The action or actions which an item is designed to perform.

3.1.39 Functional area. A distinct group of system performance requirements which, together with all other such groupings, forms the next lower level breakdown of the system on the basis of function.

3.1.40 Functional characteristics. Quantitative performance parameters and constraints, including operational and logistic parameters and their respective tolerances. Functional characteristics include all performance parameters, such as range, speed, lethality, reliability, maintainability, and safety.

3.1.41 Functional Configuration Identification (FCI). The initial approved technical documentation for a CI which prescribes:

a. all necessary functional characteristics;

b. the verification required to demonstrate achievement of specified functional characteristics;

c. the necessary interface characteristics with associated CIs;

d. CI key functional characteristics and lower level CIs, if any; and

e. design constraints, such as envelope dimensions, component standardization, use of inventory items and integrated logistics support policies.

3.1.42 Hardware. Articles made of material, such as tools, fittings, machine parts, weapons, vehicles, but not including computer programs or technical documentation.

3.1.43 Interface control. The process of:

a. identifying all functional and physical characteristics relevant to the interfacing of two or more items provided by one or more organizations; and

b. ensuring that proposed changes to these characteristics are evaluated and approved prior to implementation.

3.1.43.1 Interface Control Working Group (ICWG). For programs which encompass a system/CI/CSCI design cycle, an ICWG normally is established to control interface activity between the procuring activity, contractors

or other agencies, including resolution of interface problems and documentation of interface agreements. (See MIL-STD-483.)

3.1.44 Integrated Logistics Support (ILS). A disciplined, unified and iterative approach to management and technical activities necessary to:

a. integrate support considerations into system and equipment design;

b. develop support requirements that are related consistently to design, readiness objectives and to each other;

c. acquire required support; and

d. provide required support during the operational phase at minimum cost.

3.1.45 Item exchangeability. (See MIL-STD-280.)

3.1.45.1 Interchangeable item. An item, which:

a. possesses functional and physical characteristics equivalent in performance, reliability, and maintainability to another item of similar or identical purposes; and

b. is capable of being exchanged for the other item without alteration of the item or of adjoining items, except for adjustment or calibration.

3.1.45.2 Replacement item. An item which is replaceable with another item, but which may differ physically from the original item in that the installation of the replacement item requires operations such as drilling, reaming, cutting, filing, shimming, etc., in addition to the normal application and methods of attachment.

3.1.45.3 Substitute item. An item which possesses such functional and physical characteristics as to be capable of being exchanged for another only under specified conditions in particular applications, or from a list of approved substitute parts without alteration of the item or of adjoining items.

3.1.46 Interoperability. The ability of systems, units or forces to provide services to and accept services from other systems, units or forces and to use the services so exchanged to enable them to operate effectively together.

3.1.47 Item. A non-specific term used to denote any product, including systems, subsystems, assemblies, subassemblies, units, sets, accessories, computer programs, computer software or parts.

3.1.48 Life-cycle cost. The sum total of the direct, indirect, non-recurring, recurring, and other related costs incurred, or estimated to be incurred, in the design, development, production (including manufacture and fabrication), acquisition, test and evaluation, acceptance, operation, maintenance, modernization, deactivation and support of a configuration item over its anticipated life span.

3.1.49 Manufacturer's code. See paragraph 3.1.4 of this standard.

3.1.50 Materiel. A generic term covering systems, equipment, stores, supplies and spares, including related documentation, manuals, computer hardware and software.

3.1.51 Nonconformance. The failure of a unit or product to conform to specified requirements.

3.1.52 Non-Developmental Item (NDI). Non-developmental items are existing developed and available hardware or software that are capable of fulfilling DoD requirements, thereby minimizing or eliminating the need for costly, Government-sponsored research and development (R&D) programs. An NDI is usually an off-the-shelf or commercial-type product, but may also include hardware or software already developed by or for the DoD, or other military services or foreign military forces.

3.1.53 Notice of Revision (NOR). A document (DD Form 1695) used to propose revisions to drawings, associated lists, or other referenced documents which require revision after ECP approval. (See 5.5.)

3.1.54 Physical characteristics. Quantitative and qualitative expressions of materiel features, such as composition, dimensions, finishes, form, fit, and their respective tolerances.

3.1.55 Privately Developed Item (PDI). An item developed at private expense and offered to the Government, with Government control of the article's configuration normally limited to its form, fit and function.

3.1.56 Product Configuration Identification (PCI). The current approved technical documentation which defines the configuration of a CI during the production phase of its life cycle, and which prescribes:

a. all necessary physical or form, fit and function characteristics of a CI;

b. the selected functional characteristics designated for production acceptance testing; and

c. the production acceptance test requirements.

3.1.57 Procuring Contracting Officer (PCO). An individual authorized to enter into contracts and agreements on behalf of the Government, including the issuance of contract modifications that authorize approved configuration changes.

3.1.58 Repair. A procedure which reduces but does not completely eliminate a nonconformance resulting from production, and which has been reviewed and concurred in by the Material Review Board (MRB) and approved for use by the Government. The purpose of repair is to reduce the effect of the nonconformance. Repair is distinguished from rework in that the characteristic after repair still does not completely conform to the applicable specifications, drawings or contract requirements.

3.1.59 Repair parts. Nonreparable support items provided to replace equivalent items that are an integral part of an end item or system.

3.1.60 Retrofit. The incorporation of an engineering change (at any level) into Government accepted or in-service items.

3.1.61 Rework. A procedure applied to a nonconformance that will completely eliminate the nonconformance and result in a characteristic that conforms completely to the specifications, drawings or contract requirements.

3.1.62 Spares. Spares are units or assemblies used for maintenance replacement purposes in end items of equipment.

3.1.63 Specification. A document intended primarily for use in procurement, which describes the essential technical requirements for items, materiels or services including the procedures for determining whether or not the requirements have been met.

3.1.64 Specification Change Notice (SCN). A document (DD Form 1696) used to propose, transmit and record changes to a specification. In proposed form, prior to approval of a Class 1 change, the SCN supplies proposed changes in the text of each page affected. In final approved form, the SCN summarizes the approved changes to the text of each page affected. (See 5.6.)

3.1.65 Subcontractor. A person or business that contracts to provide some service or materiel necessary for the performance of another's contract.

3.1.66 Support equipment. Equipment required to operate and maintain an item, system, or facility in its intended environment. This includes:

a. all equipment required to maintain, test and operate the item, system or facility; and

b. computer programs related thereto.

3.1.67 Survivability. The capability of a system to avoid or withstand a hostile environment without suffering an abortive impairment of its ability to accomplish its designated mission. Survivability includes nuclear survivability.

3.1.68 System. A composite of equipment, skills, and techniques capable of performing or supporting an operational role, or both. A complete system includes all equipment, related facilities, material, software, services and personnel required for its operation and support to the degree that it can be considered a self-sufficient item in its intended operational environment.

3.1.69 Technical data. Recorded information, regardless of form or characteristics, of a technical nature. It may, for example, document research, experimental, developmental, or engineering work or be used to define a design or process or to procure, produce, support, maintain, or operate materiel. The data may be graphic or pictorial delineations in media such as drawings or photographs, text in specifications or related performance or design type documents, or computer printouts. Examples of technical data include research and engineering data, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications and related information, and computer software documentation. Technical data does not include computer software or financial, administrative, cost and pricing, and management data, or other information incidental to contract administration.

3.1.70 Technical reviews. A series of system engineering activities by which the technical progress on a project is assessed relative to its technical or contractual requirements. The reviews are conducted at logical transition points in the development effort to identify and correct problems resulting from the work completed thus far before the problems can disrupt or delay the technical progress. The reviews provide a method for the contractor and procuring activity to determine that the development of a CI and its identification have met contract requirements. (See MIL-STD-1521 and DoD-STD-2167.)

3.1.71 Training equipment. All types of maintenance and operator training hardware, devices, audio-visual training aids and related software which are:

a. used to train maintenance and operator personnel by depicting, simulating or portraying the operational or maintenance characteristics of an item, system or facility; and

b. must, by their nature, be kept consistent in design,

construction and configuration with such items in order to provide required training capability.

3.1.72 Unit. An assembly or any combination of parts, subassemblies and assemblies mounted together which are normally capable of independent operation in a variety of situations. (Examples are: hydraulic jack, electric motor, electronic power supply, internal combustion engine, electric generator, and radio receiver.) This term replaces the term "component".

3.1.73 Vendor. A manufacturer or supplier of an item.

3.1.74 Waiver. A written authorization to accept an item which, during manufacture or after having been submitted for inspection, is found to depart from specified requirements, but nevertheless is considered suitable for use "as is" or after repair by an approved method.

3.1.75 Work Breakdown Structure (WBS). A product-oriented listing, in family tree order, of the hardware, software, services and other work tasks which completely defines a product or program. The listing results from project engineering during the development and production of a defense materiel item. A WBS relates the elements of work to be accomplished to each other and to the end product.

3.2 Abbreviations/Acronyms

ACI	Allocated configuration identification
ACO	Administrative contracting officer
CAO	Contract Administration Office
CCB	Configuration control board
CD	Classification of defect
CDRL	Contract data requirements list
CFE	Contractor furnished equipment
CI	Configuration item
CM	Configuration management
CSA	Configuration status accounting
CSC	Computer software component
CSU	Computer software unit
CSCI	Computer software configuration item
DCN	Design change notice
DID	Data item description
ECP	Engineering change proposal
FCA	Functional configuration audit
FCI	Functional configuration identification
GFE	Government furnished equipment
GFM	Government furnished materiel
GFP	Government furnished property
ILS	Integrated logistics support
MIPR	Military interdepartmental purchase request

MRB	Materiel review board
MWO	Maintenance work order
NDI	Non-developmental item
NOR	Notice of revision
NSN	National stock number
PCA	Physical configuration audit
PCO	Procuring contracting officer
PSCN	Proposed specification change notice
RFD	Request for deviation
RFW	Request for waiver
SC	Service change
SCN	Specification change notice
SE	Support equipment
TCTO	Time compliance technical order
TD	Technical directive
VECP	Value engineering change proposal
WBS	Work breakdown structure

4. GENERAL REQUIREMENTS

4.1 Purpose of configuration control. The purpose of configuration control is to manage changes to CIs and their related approved configuration identification documentation to maintain or enhance reliability, performance, interoperability, supportability or operational readiness. (Configuration control begins at contract award using the functional, allocated or product configuration identification prescribed by the Government and continues throughout the life of the CI.)

4.1.1 Procedures. The steps for preparing and processing an engineering change consist of the following:

a. determination of a need for the change;

b. establishment by the originator of a classification of the engineering change as Class I or Class II;

c. preparation of an ECP;

d. submittal to the Government;

e. review;

f. approval/disapproval or concurrence/nonconcurrence in classification;

g. incorporation of approved (or concurred in) engineering changes in the CI and in the data, including, when applicable, negotiation into the contract;

h. status accounting;

i. verification of change accomplishment; and

j. distribution of documentation change.

Note: Similar steps apply to requests for deviations and waivers.

4.1.2 Classification. An engineering change shall be classified as Class I or Class II and a RFD/RFW shall be designated as minor, major, or critical by the originator in accordance with the definitions within this standard. Disagreements as to classification may be appealed to the Government procuring activity for decision.

4.2 Preparation of ECPs. DD Form 1692 shall be prepared in accordance with instructions delineated in Appendix A for Class I and Class II engineering changes. Only page 1 of DD Form 1692 is prepared for Class II

engineering changes applicable to contracts which require Government approval of Class II changes prior to implementation by the contractor. Contractors may use their own forms for other Class II changes unless otherwise specified in the contract.

4.3 Submittal of ECPs. To facilitate preparation and submittal of ECPs (DD Form 1692), and other formats under this standard, contractors may use automated processing techniques provided all essential and applicable data elements are addressed sequentially by block number. Where facilities exist, electronic transfer should be considered to expedite processing.

4.3.1 Contractor submittal. The contractor shall submit to the procuring activity or its designated representative Class I ECPs for approval and Class II changes for concurrence in classification or approval as required in the contract. For out-of-production items, the cognizant military depot, cognizant software support activity or field activity where officially designated, is considered to be the contractor.

4.3.2 Unrelated engineering changes. A separate ECP shall be submitted for each engineering change which has its own distinct objective.

4.3.3 Related engineering changes - single prime. A desired engineering change in one item (the basic engineering change) may require related engineering changes in other items in order to retain (or attain) either an interface match or compatibility of associated items. When such an engineering change is proposed and when the basic item and other items affected by related engineering changes are the responsibility of a single prime contractor, the ECP package submitted shall include both the basic and all such related engineering changes.

4.3.3.1 Related engineering changes - single prime - multiple procuring activities. The basic ECP number shall be assigned to the ECP applicable to the item which is the immediate objective of the desired ECP. Each related ECP shall be identified by the basic number plus a separate dash number.

4.3.4 Related engineering changes - separate primes. When a desired engineering change in one item (the basic engineering change) requires related engineering changes in other items which are the responsibility of other prime contractors who are participating in a specific item development or production program, the basic ECP and its impact on other items shall be coordinated as required prior to submission to the Government. The coordinated basic ECP shall include data showing the extent and results of such coordination, when applicable and available, to the related ECPs of other contractors. Likewise, each related ECP, when submitted by its separate prime, shall cross-reference the basic and other related ECPs to the extent the identifying numbers of such ECPs are available.

4.3.5 Same engineering change - dual contractors. Prime contractors to the Government who have subcontracted for the same item shall coordinate the ECP with the other contractor prior to submission. The ECP shall include data on the extent and results of such coordination.

4.3.6 Same engineering change - several contractors. Unless otherwise specified, when a procuring activity has contracts with two or more prime contractors for the same item, the procuring activity will conduct such coordination of ECPs as it deems necessary.

4.3.7 Parts substitutions. Unless otherwise specified by contract, substitution of a non-reparable part identified as an authorized substitute or superseding part in a military specification or standard, for a non-reparable part identified in the PCI, shall not require a Class I engineering change or a request for deviation or waiver, except that such substitution is not allowed until completion of equipment qualification and reliability demonstration tests. The contractor having PCI custody shall add the authorized substitute part to the parts list via Class II change if that part is preferred over the original. The contractor may also maintain a list, in contractor format, of authorized substitutions. If this option is chosen, the contractor shall reference such list on engineering drawings or parts lists as an associated document. All other parts substitutions shall be subject to 5.1, 5.2, 5.3 or 5.4 herein, as applicable.

4.3.8 Supporting data. Formal ECPs shall be supported by drawings and other data (e.g. SCNs and NORs) if required by the contracting activity to justify and describe the change and to determine its total impact including assessments of changes to system operational employment characteristics. Supporting data shall not be required to exceed the task requirements of the statement of work. Any testing done by the contractor to validate concepts or new technology to be employed in the proposed engineering change should be presented in the supporting data if such test data is vital to the decision regarding acceptance of the change.

4.3.8.1 Documentation for system or CI specification changes.

4.3.8.1.1 Specifications identified by ECP originator's name and number. For each specification cited in the contract affected by the ECP, the originator of the ECP shall submit therewith an SCN, prepared in accordance with Appendix E of this standard, covering the proposed changes in the text of the specification.

4.3.8.1.2 Specifications, drawings, associated lists or other documents not identified by ECP originator's name and number. For each document affected by the ECP (e.g., military specification, Government procuring activity specification, or another contractor's document) which would require revision or change in order to retain interface agreement with the CI as modified by implementation of the ECP, the originator of the ECP

shall submit a NOR, DD Form 1695 (see Figure 9) as an enclosure to the ECP, except where the associate contractor will submit his own SCN with an ECP prepared pursuant to an associate contractor agreement and coordinated per 4.3.4.

4.3.9 Classified data. When practicable, the ECP should be unclassified. Classified data essential to the evaluation and disposition of an ECP shall be submitted separately in accordance with the approved security procedures and referenced in the unclassified portion of the ECP. DD Form 254 of DoD Contract Security Classification Specification applies.

4.3.10 Expediting Class I engineering changes with priority of emergency or urgent. ECPs carrying a priority of emergency shall, and ECPs carrying a priority of urgent may, be reported to the Government by telephone, message, personal contact, telecopier or other expeditious means. All communications shall be identified by the ECP number. If the initial communication regarding a proposed change was by other than written message, it shall be confirmed by written message in a format essentially similar to Figure 12 within 24 hours, and followed by a formal ECP within 30 days after the first communication, unless otherwise specified by the procuring activity. However, if it is impracticable to complete a formal ECP within 30 days due to the necessity for extensive development, a preliminary ECP may be submitted within the 30 day period, followed by a formal ECP at a specified interval thereafter. The preliminary or formal ECP shall carry the same ECP number as the written message and shall include reference to:

a. method and date of the original communication;

b. individuals contacted; and,

c. source of resultant contractual direction, if any.

4.3.11 Number of copies. The number of copies of the ECP to be supplied shall be as stated in the contract.

4.4 Review and approval of Class I ECPs.

4.4.1 Class I engineering changes. Unless otherwise specified by the procuring activity, receipt of contractual approval shall constitute the sole authority for the contractor to effect a Class I change. Approval of the ECP and authorization of the change granted by the Government will include reference to the ECP by number, amendment or revision (if applicable), and date.

4.4.1.1 Class I compatibility engineering changes. This category of change is intended to allow expeditious corrective action when the need for a change has been discovered during system or item functional checks

or during installation and checkout. The contractor shall notify the procuring activity by written message within 24 hours after determining that a compatibility change is necessary, giving reasons for the change and identifying factors that will be impacted, including estimated costs and schedules. Unless otherwise prohibited by the contract, corrective action may then be implemented immediately by the contractor to resolve such incompatibilities only for the specific item(s) situated in the location at which the deficiency was originally discovered. All aspects of the compatibility definition (see 5.1.3.3) must apply. In addition, the contractor shall prepare and submit a Class I compatibility ECP to the procuring activity within 30 days after initial notification. Where further action is necessary due to "lead time" considerations, the contractor may initiate procurement or manufacturing action and shall advise the procuring activity accordingly with a change message, Figure 12, referencing the serial number(s) and locations of additional items involved. The contractor assumes total risk for implementation of such a change prior to Government authorization, except in those cases where the Government caused the incompatibility.

4.4.2 Target for decision on Class I ECPs. The criticality of the need for decision will dictate the actual processing time for ECPs. Emergency and Urgent ECPs should be proposed based upon the targets below unless otherwise agreed to between the contractor and the procuring activity. Processing targets for routine ECPs will be tailored to maximize cost effectiveness, recognizing the program, system and ECP complexity. The target for decision and contractual authorization on Class I ECPs assigned the various priorities will be the following:

a.	Emergency	48 hours
b.	Urgent	30 calendar days
c.	Routine	90 calendar days

4.5 Class II engineering changes.

4.5.1 Government review. Unless otherwise specified by the procuring activity, or unless 4.5.2 applies, Government review of Class II changes during production will consist of a technical evaluation of the change and of materiel substitutions to support concurrence in classification recommendations. Such changes shall be submitted to the procuring activity or its designated representative, prior to or concurrent with, the release of the Class II change into production. The contractor assumes total risk for implementation of changes incorporated prior to Government concurrence except in those cases where Government caused the needed change. Reviews of Class II changes shall normally be accomplished within three (3) work days after receipt by the Government.

4.5.2 Contract provisions for Class II changes. When the procuring activity has required by contract that each Class II change be approved by the Government, the contractor shall not implement the change until it is

approved by the Government.

4.5.3 Non-custody of the master drawings. When the contractor or his subcontractors do not have custody of the master (original) drawings delineating the detail design, and when compliance with such drawings is a contract requirement, each Class II engineering change is subject to approval by the Government prior to implementation.

4.6 Disapproval of ECPs. When the Government disapproves an ECP, the originator will be notified in writing within 30 calendar days of the decision and will be given the reason(s) for the disapproval.

4.7 Processing by the Government. The Government will give preference to ECPs having a priority of emergency or urgent. All VECPs coded "V" will be treated as urgent. Routine priority ECPs which are coded "R" will be given preference in processing over other routine ECPs.

4.8 Revisions of ECPs. An ECP shall be revised when major alterations or changes to the initial ECP are necessary in order to describe the proposed change, and the Government concurs in the additional engineering effort involved. A revision is normally a completely new edition of an existing ECP. Unless otherwise directed by the procuring activity, it shall supersede the original ECP or latest revision and all existing amendments. The information which differs from the original ECP shall be identified so as to be readily discerned. The first revision to an ECP shall be identified by the entry of "R1" in the revision block of the ECP form. Further revisions of the same ECP shall be identified by the entry of "R2", "R3", etc. The date of the ECP shall be the submission date of the revision.

4.9 Amendments to ECPs. An amendment clarifies, corrects, adds to, deletes from or makes other minor changes to a submitted or previously amended ECP. Amendments to an ECP shall explicitly state the change to the previous document. Amendments shall be numbered "A1", "A2", etc.

4.10 General requirements for deviations. Prior to manufacture of an item, if a contractor considers it necessary to depart from the mandatory requirements of the specified configuration identification, he may request that a deviation be authorized.

4.11 General requirements for waivers. An item which through error during manufacture does not conform to the configuration identification, shall not be delivered to, or accepted by, the Government unless a waiver has been processed and approved in accordance with this standard. (See Appendix C.)

4.12 General requirements for notices of revision. In cases where documents are not controlled by the ECP preparing activity, the NOR shall be utilized for describing the exact change to be made to each drawing,

associated list or other document which requires revision if the related change is approved. (See paragraph 4.3.8.1.2 and Appendix D.)

4.13 General requirements for specification change notices. In cases where the specifications are controlled by the ECP preparing activity, SCNs shall be utilized for describing the exact changes to be made to the affected CI specification(s) if the related ECP is approved. (See paragraph 5.6 and Appendix E.)

4.14 Contract data requirements. Data generated by this document are not deliverable unless specified in the contract data requirements list (DD Form 1423) in the contract.

5. DETAILED REQUIREMENTS

5.1 Class I engineering change. A proposed engineering change to a CI or a CSCI, or to any combination or discrete portion thereof, shall be determined to be Class I by examining the factors below, as contractually applicable, to determine if they would be impacted as a result of implementing the change. The change shall be Class I if:

a. The FCI or ACI, once established, is affected to the extent that any of the following requirements would be outside specified limits or specified tolerances:

(1) performance;

(2) reliability, maintainability or survivability;

(3) weight, balance, moment of inertia;

(4) interface characteristics;

(5) electromagnetic characteristics; or

(6) other technical requirements specified in the FCI or ACI.

NOTE: Minor clarifications and corrections to FCI and ACI shall be made only as an incidental part of the next Class I ECP and accompanying SCN, unless otherwise directed by the procuring activity.

b. A change to the PCI, once established, will affect the FCI or ACI as described in a. above, or impacts one or more of the following:

(1) GFE;

(2) safety;

(3) deliverable operational, test, or maintenance computer software associated with the CI or CSCI being changed;

(4) compatibility or specified interoperability with interfacing CIs or CSCIs, support equipment/ software, spares, trainers or training devices/equipment/software;

(5) configuration to the extent that retrofit action is required;

(6) delivered operation and maintenance manuals for which adequate change/revision funding is not provided in existing contracts;

(7) preset adjustments or schedules affecting operating limits or performance to such extent as to require assignment of a new identification number;

(8) interchangeability, substitutability, or replaceability as applied to CIs, and to all subassemblies and parts except the pieces and parts of non-reparable subassemblies; or as applied to CSCIs and to all CSCs and CSUs;

(9) sources of CIs or reparable items at any level defined by specification or source control drawings; or

(10) skills, manning, training, biomedical factors or human engineering design.

c. Any of the following contractual factors are affected:

(1) cost to the Government including incentives and fees;

(2) contract guarantees or warrantees;

(3) contractual deliveries; or

(4) scheduled contract milestones.

5.1.1 Class I engineering change to a privately developed item. An engineering change to a privately developed item shall be classified Class I when it affects the contractually specified form, fit, function, or logistics support of an item or factors in 5.1.c. When a greater degree of control is negotiated between the Government and the contractor, effects on other factors may be added to the effects on form, fit or function factors which classify an engineering change as Class I.

5.1.2 Class I engineering change criteria. Class I engineering changes shall be limited to those which are necessary or offer significant benefit to the Government. Such changes are those required to:

a. correct deficiencies;

b. add or modify interface or interoperability requirements;

c. make a significant effectiveness change in operational or logistics support requirements;

d. affect substantial life-cycle costs/savings; or

e. prevent slippage in an approved production schedule.

5.1.3 Class I ECP justification codes. Justification codes corresponding with the criteria necessary for beneficial engineering changes are defined in the following subparagraphs. If one or more of these codes are applicable to a Class I engineering change, the one which is the most descriptive or significant shall be assigned to the ECP.

5.1.3.1 Record only (Code A). Code A shall be assigned to an engineering change which, because of impact on the CI, CSCI or on logistics support, is a Class I change, but owing to the contracting method, it is within the scope of the contract. Code A ECPs normally do not require formal approval of the procuring activity.

5.1.3.2 Interface (Code B). Code B shall be assigned to an engineering change for correction of a deficiency which will eliminate interference or incompatibility at an interface between CIs.

5.1.3.3 Compatibility (Code C). Code C shall be assigned to an engineering change for correction of a deficiency in a CI or CSCI for the following characteristics:

a. the need for the change has been discovered during the system or item functional checks or during installation and checkout and is necessary to make the system or item work; or

b. the originator in assigning the compatibility code is declaring that the effort required to accomplish the change is considered to be within the scope of his existing contract except for changes caused by the Government; or

c. contractual coverage completing the formal documentation of the engineering change will not reflect an increase in contract price for the corrective action in production and to delivered items in-warranty or otherwise stipulated in the contract.

5.1.3.4 Correction of deficiency (Code D). Code D shall be assigned to an engineering change which is required to eliminate a deficiency, unless a more descriptive separate code applies. Such separate codes are used to identify deficiencies of the nature of safety, interface or compatibility.

5.1.3.5 Operational or logistics support (Code O). Code O shall be assigned to an engineering change which will make a significant effectiveness change in operational or logistics support.

5.1.3.6 Production stoppage (Code P). Code P shall be assigned to an engineering change which is required to prevent slippage in an approved production schedule. This code applies when production to the current configuration identification either is impracticable or cannot be accomplished without delay.

5.1.3.7 Cost reduction (Code R). Code R shall be assigned to an engineering change which will provide a net total cost savings to the Government, including not only all effects on cost or price under the immediate contract but also the costs resulting from necessary associated changes in delivered items, logistic support and items produced by others.

5.1.3.8 Safety (Code S). Code S shall be assigned to an engineering change for correction of a deficiency which is required primarily to eliminate a hazardous condition. When this code is assigned, a system safety analysis per MIL-STD-882 shall be included with the ECP.

5.1.3.9 Value engineering (Code V). Code V shall be assigned to an engineering change which will affect a net life cycle cost reduction and which is submitted pursuant to the value engineering clause of the contract.

5.1.4 Class I ECP types. There are two types of Class I ECPs, preliminary and formal. The type of Class I ECP appropriate to the circumstances shall be selected in accordance with the following definitions and guidelines.

5.1.4.1 Preliminary ECP (Type P). A preliminary ECP is the type which may be submitted to the Government for review prior to the availability of the information necessary to support a formal ECP. It shall include a summary of the proposed change, its impact on related areas, and a justification.

5.1.4.1.1 Use of preliminary ECPs. A preliminary ECP may be prepared and submitted for one of the following purposes:

a. to furnish the procuring activity with available information in order to permit;

(1) a preliminary evaluation relative to the merits of the proposed change (e.g. installation of a proposed change for the purpose of evaluation and testing prior to making a final decision to proceed with a proposed change); or,

(2) a determination regarding the desirability of continuing expenditures required to further develop the proposal.

b. to provide alternative proposals; or

c. to supplement a message relative to an emergency or urgent priority ECP when it is impracticable to submit a formal ECP within 30 calendar days; or

d. to propose a software change prior to the development of the actual coding changes and to obtain Government approval to proceed with software engineering development.

5.1.4.2 Formal ECP (Type F). A formal ECP is the type which provides engineering information and other data in sufficient detail to support formal change approval and contractual authorization, and which may follow the submittal of a preliminary ECP.

5.1.5 Class I engineering change priorities. A priority shall be assigned to each Class I ECP based upon a selection from the following definitions. The assigned priority will determine the time frame in which the ECP is to be reviewed, evaluated, ordered and implemented. The proposed priority is assigned by the originator and will stand unless the procuring activity has a valid reason for changing the priority.

5.1.5.1 Emergency. An emergency priority shall be assigned to an engineering change proposed for either of the following reasons:

a. to affect a change in operational characteristics which, if not accomplished without delay, may seriously compromise national security; or

b. to correct a hazardous condition which may result in fatal or serious injury to personnel or in extensive damage or destruction of equipment. (A hazardous condition usually will require withdrawing the item from service temporarily, or suspension of the item operation, or discontinuance of further testing or development pending resolution of the condition.)

5.1.5.2 Urgent. An urgent priority shall be assigned to an engineering change proposed for any of the following reasons:

a. to affect a change which, if not accomplished expeditiously, may seriously compromise the mission effectiveness of deployed equipment or forces; or

b. to correct a potentially hazardous condition, the uncorrected existence of which could result in injury to personnel or damage to equipment. (A potentially hazardous condition compromises safety and embodies risk, but within reasonable limits, permits continued use of the affected

item provided the operator has been informed of the hazard and appropriate precautions have been defined and distributed to the user.); or

c. to meet significant contractual requirements (e.g., when lead time will necessitate slipping approved production, or deployment schedules if the change was not incorporated); or

d. to affect an interface change which, if delayed, would cause a schedule slippage or increase cost; or

e. to affect, net life cycle cost savings to the Government through value engineering, or through other cost reduction efforts where expedited processing of the change will be a major factor in realizing lower costs.

5.1.5.3 Routine. A routine priority shall be assigned to a proposed engineering change when emergency or urgent is not applicable.

5.1.6 Format for Class I engineering changes. DD Forms 1692 (hereafter called the ECP forms, Figures 2 through 7) shall be used for proposing all Class I engineering changes (other than the initial communication or written message, see Figure 12). Local reproduction of the forms is authorized. The various pages of this form shall be submitted as specified in Figure 1, Appendix A and the following subparagraphs. Automated processing may be used in accordance with paragraph 4.3.

5.1.6.1 Class I engineering changes during concept exploration, demonstration and validation. Page 1 (Figure 2) of the ECP form shall be used as a cover sheet to summarize the engineering change. Page 2 (Figure 3) shall be used to describe proposed changes in the mission, performance and other requirements of the specification governing demonstration and validation. SCNs (DD Form 1696, Figure 10) shall be attached to the ECP as required for specification changes.

5.1.6.2 Class I engineering changes during Full Scale Development (FSD).

a. Page 1 of the ECP form shall be used as the cover sheet to summarize the engineering change. If prototypes of items are undergoing operational evaluation or service tests, changes in the hardware or software of such existent or subsequent prototype models shall be described on Page 3 (Figure 4), DD Form 1692-2 (or on enclosures referenced thereon).

b. Page 2 of the ECP form shall be used to describe changes from the FCI or ACI defined by the system specification and

each pertinent item specification. As required, the detailed text of proposed changes in each of these specifications is furnished as enclosures, but blocks on Page 2 of the ECP form shall be completed to summarize significant effects on specifications. SCNs, if applicable, shall be attached to the ECP.

c. Pages 3, 4, 5 and 6 of the ECP forms shall be used as prescribed in 5.1.6.3, when applicable. (See Figure 1.)

5.1.6.3 Class I engineering changes during production.

a. Page 1 of the ECP form shall be used as the cover sheet to summarize the engineering change.

b. Page 2 of the ECP form may be required. If changes are proposed to the current approved FCI or ACI, this page must be submitted.

c. Page 3 of the ECP form, with applicable enclosures, shall be used to identify the effects of the proposed change to the PCI, logistics and operations. Retrofit information shall be included in Blocks 40 through 47.

d. Page 4 (Figure 5) of the ECP form shall be used to tabulate the net life cycle cost impact of the individual ECP. Entries in the column headed "other costs/savings" to the Government need be made only to the extent estimated costs/savings data are available to the contractor.

e. Page 5 (Figure 6) of the ECP form is applicable either when there are related ECPs as described by 4.3.3 and 4.3.4 or when new trainers or support equipment will be required as a result of the ECP. The net total life cycle cost impacts (increase or decrease) of the individual related ECPs shall be summarized on Page 5, together with all related ILS costs which have not been included in the individual ECPs. Entries regarding related ECPs of other prime contractors shall be made by integrating contractors: otherwise, such entries need be made by a prime contractor only to the extent such data are available to the prime.

f. Page 6 (Figure 7) of the ECP form is required if there is a revision in the schedule actions other than delivery of the item which is the subject of the ECP. Page 6 is not required if the revision in the schedule can be fully described either in Block 19 of Page 1 or by reference therein to a revised schedule for the subject item. When required, Page 6 shall be used as a graphic presentation of

the time phasing of major actions involved in all related engineering changes to hardware, software and associated updating of documentation.

5.2 Class II engineering changes. A Class II engineering change identifies a minor change to a CI or its documentation that can be affected entirely by a contractor within the scope of a current contract effort without changing the Government approved configuration identification other than to incorporate the Class II change into the PCI. Class II changes are applicable during production and are normally identified and processed to correct documentation errors or to enhance contractor productivity without detriment to the Government. Class II changes shall not be used to incorporate engineering changes that would affect any factors listed in 5.1 of this standard. Examples of Class II engineering changes are:

a. changes that do not affect interchangeability, substitutability or replaceability of CIs, or when repairable, their subassemblies and parts;

b. substitution of parts or material which do not have a functional, logistic or reliability impact, as specified in 4.3.7; and

c. changes in documentation only (e.g., correction of errors, addition of clarifying notes or views, addition, deletion or correction of non-executable comment lines-of-code to software).

5.2.1 Impact of Class II changes. When two or more contractors are producing items to the same mandatory detail drawings, an engineering change which is Class II to the originator may be Class I in its impact on the other contractor(s). If such is the case, the procuring activity shall provide direction.

5.2.2 Class II engineering change format. The format for submittal of a Class II engineering change shall be one of the following:

a. Use Page 1 of the ECP form, or the contractor's own form where the change is submitted to the Government for concurrence in classification only. The form shall include as a minimum the following:

(1) name and part number of item affected;

(2) name and part number of next higher assembly;

(3) description of the engineering change;

(4) reason for making the engineering change; and

(5) Government contract number(s) or other program identification acceptable to the local ACO.

b. Use Page 1 of the ECP form when the contract provisions require that each Class II engineering change be approved by the Government.

5.2.3 Class II initiation. The justification codes for Class I engineering changes need not be applied to a Class II engineering change, and usually none will be pertinent. A Class II engineering change may be initiated when the originator considers that the change will enhance contractor productivity and will not be detrimental to the Government.

5.3 Requirements for deviations. Prior to manufacture of an item, if a contractor considers it necessary to depart from the mandatory requirements of the specification or drawings, the contractor may request that a deviation be authorized. As an example, a deviation relating to an alternative material or process may be requested. Another example is a request for the postponement of a specific software function to a later version of a CSCI by deviation from the software requirements specification. A deviation may be processed in lieu of an ECP when the documented design is regarded as superior to the proposed deviation. A proposed design change may be converted to an authorized departure at the option of the Government. Conversely a requested deviation may be converted to a Class I change if it is determined that the change should be permanent. Items shall not be delivered incorporating a known departure from documentation unless a request for a deviation or waiver has been approved in accordance with the requirements of this standard, or unless otherwise contractually authorized. For parts substitutions which do not require requests for deviations see 4.3.7.

5.3.1 Designation as minor, major or critical. Each request for a deviation shall be designated as minor, major or critical.

5.3.1.1 Minor. A deviation shall be designated as minor when:

a. a classification of defects (CD) utilizing the definitions of MIL-STD-109 exists, and the deviation consists of departure from a characteristic in the documentation which is classified in the CD as minor; or

b. the deviation consists of a departure which does not involve any of the factors listed in 5.3.1.2 (b) or 5.3.1.3 (b).

5.3.1.2 Major. A deviation shall be designated as major when:

a. a CD utilizing the definitions of MIL-STD-109 exists, and the deviation consists of a departure from a characteristic in the documentation which is classified in the CD as major; or

b. the deviation consists of a departure involving: (1) health; (2) performance; (3) interchangeability; reliability; survivability; maintainability or durability of the item or its repair parts; (4) effective use or operation; (5) weight and size; or (6) appearance (when a factor).

5.3.1.3 Critical. A deviation shall be designated as critical when:

a. a CD utilizing the definitions of MIL-STD-109 exists, and the deviation consists of a departure from a characteristic in the documentation which is classified in the CD as critical; or

b. the deviation consists of a departure involving safety.

5.3.2 Restrictions on deviations. Unless unusual circumstances exist, critical deviations shall not be submitted. Deviations normally do not apply to software code listings; they may be used for software specifications. Suggested deviations which would affect service operation, logistic interoperability or maintenance (e.g., repair parts, operation or maintenance procedures, or compatibility with trainers or test sets) shall not be submitted or authorized as deviations. Such changes, if approved, should be covered by appropriate revisions in drawings and technical manuals, hence they should be proposed and processed as Class I ECPs.

5.3.3 Format. Unless otherwise specified, the contractor may use any of the following forms for requesting a deviation: DD Form 1694, a form of the contractor's own design, or a letter.

5.3.3.1 Form or letter content. Regardless of the form used, each request for a deviation shall contain all information required by Appendix B.

5.3.4 Preparation. If DD Form 1694 (Figure 8) is used for a request for deviation, the form shall be prepared in accordance with Appendix B.

5.3.5 Submittal. Unless otherwise specified by the procuring activity, requests for critical or major deviations shall be submitted through the channels specified in the contract for Class I ECPs and minor deviations through the channels specified for Class II engineering changes. The number of copies of the request for a deviation to be

supplied shall be as stated in the contract.

5.3.6 Review and approval. Unless otherwise specified in the contract, requests for critical or major deviations should be approved or disapproved within 30 calendar days of receipt by the procuring activity, and minor deviations should be approved or disapproved within 10 work days of receipt by the reviewing activity authorized to approve or disapprove minor deviations.

5.3.6.1 Minor deviations. Unless otherwise specified by the procuring activity, minor deviations shall be authorized (or disapproved) for the Government by the activity authorized to approve or concur in classification of Class II changes.

5.3.6.2 Critical and major deviations. Unless otherwise specified by the procuring activity, critical and major deviations shall only be approved by a Government contracting officer.

5.3.7 Recurring deviations. If a proposed deviation is recurring (a repetition or extension of a previous deviation), it is probable that either the requirements of the documentation are too stringent or the corrective action of the manufacturer was ineffective. A determination should be made concerning a means of eliminating the need for a recurring deviation prior to its submission and authorization.

5.4 Requirements for waivers. During or after manufacture of an item or after having been submitted for inspection, an item is found to depart from specified requirements, but nevertheless is considered suitable for use "as is" or after repair by an approved method, the contractor shall process a request for waiver. If a local material review board (MRB) is properly constituted in accordance with procuring activity requirements, the established practices of the MRB remain in effect for minor waivers. See MIL-STD-1520 for guidance.

5.4.1 Designation as minor, major or critical. Each request for a waiver shall be designated as minor, major or critical as described in the following subparagraphs.

5.4.1.1 Minor. A waiver shall be designated as minor when:

a. an Acceptable Quality Level (AQL) is specified in the contract specification or other contract document, and the waiver consists of acceptance of a lot of items having a number of minor defects in the sample equalling or exceeding the number that requires rejection of the lot; or

b. a CD utilizing the definitions of MIL-STD-109 exists, and the waiver consists of acceptance of an item having a minor defect(s); or

c. the waiver consists of acceptance of an item having a nonconformance with contract or configuration identification requirements which does not involve any of the factors listed in 5.4.1.2 (c) or 5.4.1.3.

5.4.1.2 Major. A waiver shall be designated as major when:

a. an AQL is specified in the contract specification or other contract document, and the waiver consists of acceptance of a lot of items having a number of major defects in the sample equalling or exceeding the number that requires rejection of the lot; or

b. a CD utilizing the definitions of MIL-STD-109 exists, and the waiver consists of acceptance of an item having a major defect; or

c. the waiver consists of acceptance of an item having a nonconformance with contract or configuration identification requirements involving: (1) health, (2) performance, (3) interchangeability, reliability, survivability or maintainability of the item or its repair parts, (4) effective use or operation, (5) weight, or (6) appearance (when a factor).

5.4.1.3 Critical. A waiver shall be designated as critical when:

a. a CD utilizing the definitions of MIL-STD-109 exists, and the waiver consists of acceptance of an item having a critical defect; or

b. the waiver consists of acceptance of an item having a nonconformance with contract or configuration identification requirements involving safety.

5.4.1.4 Format. The contractor may use any of the following forms for requesting a waiver: DD Form 1694, a form of the contractor's own design, or a letter.

5.4.1.5 Form or letter content. Regardless of the form used, each request for a waiver shall contain all information required by Appendix C.

5.4.2 Preparation. If DD Form 1694 (Figure 8) is used to request a waiver, the form shall be prepared in accordance with Appendix C.

5.4.3 Submittal. Except for MRB procedures for "minor" waivers, the number of copies of the request for a waiver to be supplied shall be as stated in the contract. Unless otherwise specified in the contract, requests for "major" or "critical" waivers shall be submitted to the

procuring activity for approval or disapproval.

5.4.4 Review and approval. Unless otherwise specified in the contract, requests for critical or major waivers should be approved or disapproved within 30 calendar days of receipt by the procuring activity, and minor waivers should be approved or disapproved within 10 work days of receipt by the Government.

5.4.4.1 Minor waivers. Unless otherwise specified by the procuring activity, minor waivers shall be dispositioned by the local MRB when such a board is properly constituted, or in the absence of such MRB by the CAO.

5.4.4.2 Critical and major waivers. Unless otherwise specified by the procuring activity, critical and major waivers shall only be approved by a Government contracting officer.

5.4.4.3 Recurring waivers. If a request for waiver is recurring (a repetition or extension of a previous waiver), it is probable that either the requirements of the documentation are too stringent or the corrective action of the manufacturer was ineffective. A determination should be made concerning a means of eliminating the need for a recurring waiver prior to its submission and authorization.

5.5 Notices of revision. The preparation and submittal of notices of revision (NORs) apply only under either one or both of the following conditions:

a. a requirement for submittal of NORs in accordance with this standard is prescribed in the contract; or

b. in order to agree with an approved ECP, documentation (e.g. engineering drawing(s), associated lists, software listing(s) or other documents) not identified by the name and number of the originator of the ECP require revision or change. However, if coordination on companion ECPs are accomplished in accordance with 4.3.4, and the associate contractor agrees to submit an SCN or other applicable change notice as part of their ECP, NORs shall not be required.

5.5.1 Application. NORs are used when the master (original) drawings, lists and other documents comprising the configuration identification for an item are not held by the originator of the ECP. In such cases, the originator is not permitted to revise the documents and therefore cannot comprehensively document the redesign. NORs permit the ECP reviewing and approving activity to direct the custodian of each document, other than the ECP originator, to make specific revisions in affected documents.

5.5.2 Preparation of NORs. A separate NOR, DD Form 1695 (Figure 9), shall be prepared in accordance with Appendix D for each drawing, associated list or other referenced document which requires revision if

the related engineering change is approved. The description of the revision shall consist of a detailed "From" and "To" condition depiction of the exact change to be made to the affected drawing, list, or other document(s).

5.5.3 Submittal. Submission of NORs will be in accordance with contract requirements. NORs will be attached to their related ECPs.

5.5.4 Action by Government. The procuring activity or the designated design activity will direct the revision of all documents affected by approved NORs.

5.6 Specification Change Notices (SCN).

5.6.1 Application. An SCN shall be prepared, rather than a NOR, to propose a change to a specification that is affected by an ECP and the specification is one that is maintained by the ECP originator. Or when authorized, a SCN shall be used to update a specification, unrelated to an ECP or design change. Errors of a minor nature (such as typographical errors, punctuation, etc.) normally shall not be corrected, except as an incidental part of the next technically required ECP and accompanying proposed SCN.

5.6.2 Purpose. The SCN is a document used to propose, transmit, and record changes to a specification. The SCN, DD Form 1696 (Figure 10), is used as a cover sheet and may serve as a letter of transmittal; the page changes associated with that SCN shall be attached and shall constitute an integral part of the SCN.

5.6.2.1 Proposed SCN. A proposed specification change notice (SCN) shall be used to propose to the specification approving activity the exact change in specification paragraphs, figures or other content that will be distributed to users if the ECP is approved. The proposed modification in content submitted with the proposed SCN may be in the form of specification change pages or as an enclosure on which the proposed changes in sentences, paragraphs, figures, tables, etc., are described.

5.6.2.2 Approved SCN. An approved SCN shall be used to transmit the changes after approval by an authorized agent of the Government. It also provides a summary listing of pages affected by all previously approved changes. SCNs are not cumulative insofar as transmittal of change pages from previous changes is concerned, and changes distributed with previous SCNs remain in effect unless changed or cancelled by an SCN of later issue. However, the summary of current changes is a cumulative summary as of the date of approval of the latest SCN.

5.6.2.3 Changed pages. Updated and reissued pages shall be complete reprints of pages suitable for incorporation by removal of old pages and insertion of new pages. All portions affected by the change shall be

indicated by a symbol in the right hand margin adjacent to the change and encompassing all changed portions. When changed pages are issued for specifications with pages printed on both sides of a sheet, and only the page on one side of a sheet is affected by the change, both sides of the sheet shall be reissued. The unchanged side shall be reprinted without change and shall not carry the date of the change or be included in the change summary as being affected by the change.

5.6.2.4 Supersession. When a proposed SCN must be revised and resubmitted, the resubmitted SCN shall retain the same basic SCN number but must be reidentified as a revision to avoid confusion with the original submittal.

5.6.3 Preparation of SCNs. The DD Form 1696 shall be prepared in accordance with Appendix E. An SCN includes a DD Form 1696 (Figure 10) and attachments containing the proposed changes to the specification.

5.6.3.1 SCN cover page. The DD Form 1696 shall serve as a cover page. SCNs for a specification are sequentially numbered beginning with SCN 1; SCNs for a newly revised specification are also sequentially numbered starting again with SCN 1. The SCN number is entered in the appropriate block on the DD Form 1696. The proposed SCN, or any revisions thereto, and the approved SCN shall carry the same number. Once an SCN has been submitted to the Government along with an ECP, its SCN sequence number related to that specific ECP shall not thereafter be changed or assigned to another ECP/SCN package. (SCN numbers associated with disapproved ECPs are not reused.) However, due to differing change processing/approval time periods, SCNs may be approved by the Government out of sequence. If this occurs, the SCN cover sheet (DD Form 1696) would not be changed, but some of the attached change pages might have to be revised to reflect the current wording as of the approval date.

5.6.3.2 SCN attachments. The attachments to the DD Form 1696 shall be:

a. for PSCNs, pages containing detailed information about the exact proposed changes to the specification by reference to the sentence, paragraph, page, figure, or table and by citing the words/information to be changed; or

b. replacement new specification pages in format suitable to be substituted for existing pages, identified with the specification number and SCN approval date, numbered with the same numbers of the pages they replace plus a suffix letter where additional pages are needed to replace a page (e.g., new pages 5 and 5a replace old page 5), and all portions affected indicated by symbols (e.g., change bars, asterisks etc.) in the right margin; or

c. a proposed specification revision, where more practical, identified with the same number as the specification to be superseded with a new revision letter, prepared to the same format, and all portions affected identified with symbols in the right margin or containing a note explaining that the changes are too extensive to be identified.

6. INFORMATION FOR GUIDANCE ONLY

(This section contains information of a general or explanatory nature which is helpful, but is not mandatory.)

6.1 Tailoring guidance. Appendix F is directed specifically toward computer software ECPs. Appendix G provides guidance for the tailoring of this standard to specific program requirements.

6.2 Consideration of data requirements. The following data requirements should be considered when this standard is applied on a contract. The applicable Data Item Descriptions (DIDs) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/provided and that the DIDs are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual applications of the data requirements, Contract Data Requirements Lists (DD Form 1423) must be prepared to obtain the data, except where DoD FAR Supplement 27.475-1 exempts the requirement for a DD Form 1423.

Reference Paragraph	DID Number	DID Title
4.2, 4.3.8 and 5.1.6	DI-CMAN-80639	Engineering Change Proposal
5.3.4	DI-CMAN-80640	Request for Deviation
5.4.2	DI-CMAN-80641	Request for Waiver
5.5.2	DI-CMAN-80642	Notice of Revision
5.6.3	DI-CMAN-80643	Specification Change Notice

(Copies of DIDs required by civilian or Government contractors in connection with specific acquisition functions should be obtained from the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099 or as directed by the contracting officer.)

6.3 Subject term (key word) listing.

Baseline
Configuration
Configuration audit
Configuration control
Configuration identification
Configuration item
Configuration management

Design change notice
Deviation
Engineering change
Engineering change proposal
Integrated logistic support
Material review board
Notice of revision
Specification
Specification change notice
Waiver

6.4 Changes from previous issue. Asterisks or vertical lines are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

6.5 Concurrence by requiring activities. If the procuring activity or purchasing office is not the military activity responsible for technical requirements, the concurrence of such military activity (or in the case of a Military Interdepartmental Purchase Request (MIPR), the concurrence of the requiring department) shall be obtained prior to contractual action.

6.6 Comments on waivers, deviations or engineering change requests (DD Form 1998). DD Form 1998 may be used by the CAO to record routing, comments and recommendations to the procuring activity when the reviewing activity does not have approval or disapproval authority.

DD FORM		LIFE CYCLE PHASES			
NO. AND PAGE	USAGE	Program Initiation (Conceptual)	Demonstration and Validation	Full Scale Development	Production/ Deployment and Operational
1692 Page 1	Cover Sheet	REQUIRED Only when functional characteristics are to be controlled	REQUIRED Cover sheet summarizes the ECP	REQUIRED Cover sheet summarizes the ECP	REQUIRED Cover sheet summarizes the ECP
1692-1 Page 2	Effects on Functional Allocated Configuration Identification	NOT REQUIRED	REQUIRED USED to: Describe proposed changes in functional configuration identification	REQUIRED USED to: Describe proposed changes in functional or allocated configuration identification as defined by system and appropriate item specification	REQUIRED if: (a) System specification change is associated with design change (b) Two part specification method used & part I specification needs to be changed (c) Development & product fabrication specifications used and development specification needs to be changed (d) Other Systems or Configuration Items are affected
1692-2 Page 3	Effects on Product Configuration Identification Operations and Logistics	NOT REQUIRED	NOT REQUIRED	REQUIRED when: Prototypes are undergoing operational or service testing USED to: Provide an index to impacts of the change	REQUIRED USED to: Describe effects of change in product configuration identification & changes in parts or assemblies
1692-3 Page 4	Estimated Net Total Cost Impact (one item)	NOT REQUIRED	NOT REQUIRED	REQUIRED when: (a) ECP requires change to contract cost (b) Future production cost is a consideration in evaluating desireability of effecting the proposed change	REQUIRED USED to: Tabulate cost impact
1692-4 Page 5	Estimated Cost/Savings Summary Related ECPs	NOT REQUIRED	NOT REQUIRED	REQUIRED if: (a) There are related ECPs applying to two or more items (b) New trainers or items of support equipment are required USED to: Summarize cost impact of all related ECPs	REQUIRED if: (a) There are related ECPs applying to two or more items (b) New trainers or items of support equipment are required USED to: Summarize cost impact of all related ECPs
1692-5 Page 6	Milestone Chart	NOT REQUIRED	NOT REQUIRED	REQUIRED if: There is a schedule change in more than delivery date for item USED to: Show-inter-relationships in schedules	REQUIRED if: There is a schedule change in more than delivery date for item USED to: Show-inter-relationships in schedules

JUL 1988

FIGURE 1. Life Cycle Applications of DD Form 1692.

ENGINEERING CHANGE PROPOSAL, PAGE 1

(See MIL-STD-480 for instructions)

DATE (YYMMDD)	Form Approved OMB No 0704-0188

PROCURING ACTIVITY NO.

1. ORIGINATOR NAME AND ADDRESS

2. CLASS OF ECP

3. JUST. CODE

4. PRIORITY

5. ECP DESIGNATION

a. MODEL / TYPE	b. CAGE CODE	c. SYSTEM DESIGNATION	d. ECP NO	e. TYPE	f. REV	g. AMEND

6. BASELINE AFFECTED

☐ FUNCTIONAL ☐ ALLOCATED ☐ PRODUCT

7. OTHER SYS. / CONFIG. ITEMS AFFECTED

☐ YES ☐ NO

8. SPECIFICATIONS AFFECTED - TEST PLAN

9. DRAWINGS AFFECTED

	CAGE CODE	SPEC/DOC NO	REV	SCN	CAGE CODE	NUMBER	REV	NOR
a. SYSTEM								
b. ITEM								
c. TEST PLAN								

10. TITLE OF CHANGE

10.a. WEAPON SYSTEM CODE OR DESIGNATION

11. CONTRACT NO. AND LINE ITEM

12. PROCURING CONTRACTING OFFICER

CODE TEL

13. CONFIGURATION ITEM NOMENCLATURE

14. IN PRODUCTION

☐ YES ☐ NO

15. LOWEST ASSEMBLY AFFECTED

NOMENCLATURE	PART NO	NSN

16. DESCRIPTION OF CHANGE

17. NEED FOR CHANGE

18. PRODUCTION EFFECTIVITY BY SERIAL NUMBER

19. EFFECT ON PRODUCTION DELIVERY SCHEDULE

20. RETROFIT

a. RECOMMENDED ITEM EFFECTIVITY

c. SHIP / VEHICLE CLASS AFFECTED

b. ESTIMATED KIT DELIVERY SCHEDULE

d. LOCATIONS OR SHIP / VEHICLE NUMBERS AFFECTED

21. ESTIMATED COSTS / SAVINGS UNDER CONTRACT

22. ESTIMATED NET TOTAL COSTS / SAVINGS

23. SUBMITTING ACTIVITY AUTHORIZED SIGNATURE

23.a. TITLE

24. APPROVAL / DISAPPROVAL

a. CLASS I	b. CLASS II	c. CLASS II
☐ APPROVAL RECOMMENDED ☐ DISAPPROVAL RECOMMENDED	☐ APPROVED ☐ DISAPPROVED	☐ CONCUR IN CLASSIFICATION OF CHANGE ☐ DO NOT CONCUR IN CLASSIFICATION OF CHANGE

d. GOVERNMENT ACTIVITY	SIGNATURE	DATE (YYMMDD)

e. APPROVAL	f. GOVERNMENT ACTIVITY	SIGNATURE	DATE (YYMMDD)
☐ APPROVED ☐ DISAPPROVED			

DD Form 1692, JUL 88 *Previous editions are obsolete*

FIGURE 2. ECP Page 1 (DD Form 1692).

ENGINEERING CHANGE PROPOSAL, PAGE 2 *(See MIL-STD-480 for instructions)*	*Form Approved* *OMB No. 0704-0188*

ORIGINATOR NAME AND ADDRESS	PROCURING ACTIVITY NUMBER
	ECP NUMBER

EFFECTS ON FUNCTIONAL / ALLOCATED CONFIGURATION IDENTIFICATION

25. OTHER SYSTEMS AFFECTED	26. OTHER CONTRACTORS / ACTIVITIES AFFECTED

27. CONFIGURATION ITEMS AFFECTED

28. EFFECTS ON PERFORMANCE ALLOCATIONS AND INTERFACES IN SYSTEM SPECIFICATION

29. EFFECTS ON EMPLOYMENT, INTEGRATED LOGISTICS SUPPORT, TRAINING, OPERATIONAL EFFECTIVENESS OR SOFTWARE

30. EFFECTS ON CONFIGURATION ITEM SPECIFICATIONS

31. DEVELOPMENTAL REQUIREMENTS AND STATUS

32. TRADE-OFFS AND ALTERNATIVE SOLUTIONS

33. DATE BY WHICH CONTRACTUAL AUTHORITY IS NEEDED

DD Form 1692-1, JUL 88 *Previous editions are obsolete.* 176221

FIGURE 3. ECP Page 2 (DD Form 1692-1).

ENGINEERING CHANGE PROPOSAL, PAGE 3

(See MIL-STD-480 for instructions)

Form Approved
OMB No. 0704-0188

ORIGINATOR NAME AND ADDRESS	PROCURING ACTIVITY NUMBER
	ECP NUMBER

EFFECTS ON PRODUCT CONFIGURATION IDENTIFICATION, LOGISTICS AND OPERATIONS

(X)	FACTOR	ENCL.	PAR.	(X)	FACTOR	ENCL.	PAR.
	34. EFFECT ON PRODUCT CONFIGURATION IDENTIFICATION OR CONTRACT				**36. EFFECT ON OPERATIONAL EMPLOYMENT**		
	a. PERFORMANCE				a. SAFETY		
	b. WEIGHT-BALANCE-STABILITY *(Aircraft)*				b. SURVIVABILITY		
	c. WEIGHT-MOMENT *(Other equipment)*				c. RELIABILITY		
	d. CDRL, TECHNICAL DATA				d. MAINTAINABILITY		
	e. NOMENCLATURE				e. SERVICE LIFE		
					f. OPERATING PROCEDURES		
	35. EFFECT ON INTEGRATED LOGISTICS SUPPORT (ILS) ELEMENTS				g. ELECTROMAGNETIC INTERFERENCE		
					h. ACTIVATION SCHEDULE		
	a. ILS PLANS				i. CRITICAL SINGLE POINT FAILURE ITEMS		
	b. MAINTENANCE CONCEPT, PLANS AND PROCEDURES				j. INTEROPERABILITY		
	c. LOGISTICS SUPPORT ANALYSES						
	d. INTERIM SUPPORT PROGRAMS						
	e. SPARES AND REPAIR PARTS				**37. OTHER CONSIDERATIONS**		
	f. TECH MANUALS/PROGRAMMING TAPES				a. INTERFACE		
	g. FACILITIES				b. OTHER AFFECTED EQUIPMENT/ GFE / GFP		
	h. SUPPORT EQUIPMENT				c. PHYSICAL CONSTRAINTS		
	i. OPERATOR TRAINING				d. COMPUTER PROGRAMS AND RESOURCES		
	j. OPERATOR TRAINING EQUIPMENT				e. REWORK OF OTHER EQUIPMENT		
	k. MAINTENANCE TRAINING				f. SYSTEM TEST PROCEDURES		
	l. MAINTENANCE TRAINING EQUIPMENT				g. WARRANTY / GUARANTEE		
	m. CONTRACT MAINTENANCE				h. PARTS CONTROL		
	n. PACKAGING, HANDLING, STORAGE, TRANSPORTABILITY						

38. ALTERNATE SOLUTIONS

39. DEVELOPMENTAL STATUS

40. RECOMMENDATIONS FOR RETROFIT

41. WORK-HOURS PER UNIT TO INSTALL RETROFIT KITS

a. ORGANIZATION	b. INTERMEDIATE	c. DEPOT	d. OTHER

42. WORK-HOURS TO CONDUCT SYSTEM TESTS AFTER RETROFIT

43. THIS CHANGE MUST BE ACCOMPLISHED

☐ BEFORE ☐ WITH ☐ AFTER THE FOLLOWING CHANGES

44. IS CONTRACTOR FIELD SERVICE ENGINEERING REQUIRED?

☐ YES ☐ NO

45. OUT OF SERVICE TIME

46. EFFECT OF THIS ECP AND PREVIOUSLY APPROVED ECP'S ON ITEM

47. DATE CONTRACTUAL AUTHORITY NEEDED FOR

PRODUCTION _____

RETROFIT _____

DD Form 1692-2, JUL 88 *Previous editions are obsolete.* 354-221

FIGURE 4. ECP Page 3 (DD Form 1692-2).

ENGINEERING CHANGE PROPOSAL, PAGE 4

(See MIL-STD-480 for instructions)

Form Approved
OMB No. 0704-0188

ORIGINATOR NAME AND ADDRESS	PROCURING ACTIVITY NUMBER
	ECP NUMBER

48. ESTIMATED NET TOTAL COST IMPACT *(Use parentheses for savings)*

FACTOR	COSTS / SAVINGS UNDER CONTRACT					OTHER COSTS / SAVINGS TO THE GOVERNMENT
	NON-RECURRING	RECURRING			TOTAL	
		UNIT	QUANTITY	TOTAL (Recurring)		
	(1)	(2)	(3)	(4)	(5)	(6)
a. PRODUCTION COSTS / SAVINGS						
CONFIGURATION ITEM / CSCI						
FACTORY TEST EQUIPMENT						
SPECIAL FACTORY TOOLING						
SCRAP						
ENGINEERING, ENGINEERING DATA REVISION						
REVISION OF TEST PROCEDURES						
QUALIFICATION OF NEW ITEMS						
SUBTOTAL OF PROD COSTS / SAVINGS						
b. RETROFIT COSTS						
ENGINEERING DATA REVISION						
PROTOTYPE TESTING						
KIT PROOF TESTING						
RETROFIT KITS FOR OPERATIONAL SYSTEMS						
PREP. OF MWO / TCTO / SC / ALT / TD						
SPECIAL TOOLING FOR RETROFIT						
CONTRACTOR FIELD SERVICE ENGINEERING						
GOV'T PERSONNEL INSTALLATION						
TESTING AFTER RETROFIT						
MODIFICATION OF GFE / GFP						
QUALIFICATION OF GFE / GFP						
SUBTOTAL OF RETROFIT COSTS / SAVINGS						
c. INTEGRATED LOGISTICS SUPPORT COSTS / SAVINGS						
SPARES / REPAIR PARTS REWORK						
NEW SPARES AND REPAIR PARTS						
SUPPLY / PROVISIONING DATA						
SUPPORT EQUIPMENT						
RETROFIT KITS FOR SPARES						
OPERATOR TRAINING COURSES						
MAINTENANCE TRAINING COURSES						
REV. OF TECH MAN./PROGRAMMING TAPES						
NEW TECH MAN./PROGRAMMING TAPES						
TRAINING / TRAINERS						
INTERIM SUPPORT						
MAINTENANCE MANPOWER						
COMPUTER PROGRAMS / DOCUMENTATION						
SUBTOTAL OF ILS COSTS / SAVINGS						
d. OTHER COSTS / SAVINGS						
e. SUBTOTAL COSTS / SAVINGS						
SUBTOTAL UNDER CONTRACT						
f. COORDINATION OF CHANGES WITH OTHER CONTRACTORS						
g. COORDINATION CHANGES BY GOVERNMENT						
ESTIMATED NET TOTAL COSTS / SAVINGS						

DD Form 1692-3, JUL 88

Previous editions are obsolete.

FIGURE 8. ECP Page 4 (DD Form 1692-3).

ENGINEERING CHANGE PROPOSAL, PAGE 5

(See MIL-STD-480 for instructions)

Form Approved
OMB No. 0704-0188

ORIGINATOR NAME AND ADDRESS	PROCURING ACTIVITY NUMBER
	ECP NUMBER

49. ESTIMATED COSTS / SAVINGS SUMMARY, RELATED ECP'S *(Use parentheses for savings)*	CAGE CODE (1)	ECP NUMBER (2)	COSTS / SAVINGS UNDER CONTRACTS (3)	OTHER COSTS SAVINGS TO GOVERNMENT (4)
a. PRODUCTION COSTS / SAVINGS *(Subtotal of Costs / Savings Elements from block 48a applicable to aircraft, ship, tank, vehicle, missile or its subsystem)*				
SUBTOTAL PRODUCTION COSTS / SAVINGS				
b. RETROFIT COSTS *(Applicable to aircraft, ship, tank, vehicle, missile or its subsystem)*				
SUBTOTAL RETROFIT COSTS				
c. INTEGRATED LOGISTICS SUPPORT COSTS / SAVINGS				
REVISED REQUIREMENTS				
1. ITEM RETROFIT *(If not covered under "b") (Applicable to aircraft, ship, tank, vehicle, missile or its subsystem)*				
2. ILS SUBTOTAL *(Applicable to aircraft, ship, tank, vehicle, missile or its subsystem)*				
3. OPERATOR TRAINER *(Net total cost / saving from each ECP covering operator trainer)*				
4. MAINTENANCE TRAINER *(Net total cost / saving from each ECP covering maintenance trainer)*				
5. OTHER TRAINING EQUIPMENT				
6. SUPPORT EQUIPMENT *(Net total cost / saving from each ECP on support equipment)*				
7. ILS PLANS				
8. MAINTENANCE CONCEPT, PLANS, SYSTEM DOCUMENTS				
9. INTERIM SUPPORT PLAN				

NEW REQUIREMENTS	PROCURING ACTIVITY CODE	NON-RECURRING COSTS	RECURRING COSTS UNIT	RECURRING COSTS QTY	RECURRING COSTS TOTAL		
10. PROVISIONING DOCUMENTATION							
11. OPER TRNR / TRNG DEVICES / EQUIP							
12. MANUALS / PROGRAMMING TAPES, SPARES, REPAIR PARTS *(For 11)*							
13. MAINTENANCE TRNR / TRNG DEVICES / EQUIPMENT							
14. MANUALS / PROGRAMMING TAPES, SPARES, REPAIR PARTS *(For 13)*							
15. SUPPORT EQUIPMENT							
16. MANUALS / PROGRAMMING TAPES *(For 15)*							
17. PROVISIONING DOCUMENTATION *(For 15)*							
18. REPAIR PARTS *(For 15)*							
SUBTOTAL ILS COSTS / SAVINGS *(Sum of c.1 through c.18)*							

d. OTHER COSTS / SAVINGS *(Total from block 48d of related ECP's)*	CAGE CODE	ECP NUMBER		
TOTAL OTHER COSTS / SAVINGS				
SUBTOTALS OF COLUMNS				
SUBTOTAL UNDER CONTRACT				
e. ESTIMATED NET TOTAL COSTS / SAVINGS *(a + b + c + d)*				

DD Form 1692-4, JUL 88

Previous editions are obsolete

FIGURE 8. ECP Page 5 (DD Form 1692-4).

ENGINEERING CHANGE PROPOSAL, PAGE 6 (MILESTONE CHART)

(See MIL-STD-480 for instructions)

DATE (YYMMDD)	Form Approved OMB No. 0704-0188

ORIGINATOR NAME AND ADDRESS	PROCURING ACTIVITY NUMBER	
	CAGE CODE	ECP NUMBER

CONFIGURATION ITEM NOMENCLATURE	TITLE OF CHANGE

DATE AUTHORIZATION TO PROCEED RECEIVED BY CONTRACTOR → ▼ (S) START DELIVERY (C) COMPLETE DELIVERY ▼ PROGRESS POINT

	NO. OF MONTHS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
CONFIGURATION ITEM	PRODUCTION																																				
	TECH MANUALS																																				
	RETROFIT																																				
	MWO / TCTO / SC / ALT / TD																																				
	SPARES / REPAIR PARTS																																				
	SOFTWARE																																				
SUPPORT EQUIPMENT	PRODUCTION																																				
	TECH MANUALS / PROG. TAPES																																				
	RETROFIT																																				
	MWO / TCTO / SC / ALT / TD																																				
	REPAIR PARTS																																				
TRAINER	OPERATOR																																				
	MAINTENANCE																																				
	NO. OF MONTHS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36

DD Form 1692-5, JUL 88 *Previous editions are obsolete.* 22V222

FIGURE 7. ECP Page 6 (DD Form 1692-5).

REQUEST FOR DEVIATION / WAIVER

(See MIL-STD-480 or 481 for instructions)

DATE (YYMMDD)

Form Approved
OMB No. 0704-0188

PROCURING ACTIVITY NUMBER

1. ORIGINATOR NAME AND ADDRESS

2. ☐ DEVIATION ☐ WAIVER

3. ☐ MINOR ☐ MAJOR ☐ CRITICAL

4. DESIGNATION FOR DEVIATION / WAIVER

a. MODEL/TYPE	b. CAGE CODE	c. SYS DESIG.	d. DEV/WAIVER NO.

5. BASELINE AFFECTED ☐ FUNCTIONAL ☐ ALLOCATED ☐ PRODUCT

6. OTHER SYSTEM / CONFIGURATION ITEMS AFFECTED ☐ YES ☐ NO

7. SPECIFICATIONS AFFECTED - TEST PLAN

8. DRAWINGS AFFECTED

	CAGE CODE	SPECIFICATION / DOCUMENT NO.	REV.	CAGE CODE	NUMBER	REV.
a. SYSTEM						
b. ITEM						
c. TEST PLAN						

9. TITLE OF DEVIATION / WAIVER

9.a. WEAPON SYSTEM CODE OR DESIGNATION

10. CONTRACT NO. AND LINE ITEM

11. PROCURING CONTRACTING OFFICER
CODE TEL

12. CONFIGURATION ITEM NOMENCLATURE

13. CLASSIFICATION OF DEFECT

a. CD NO.	b. DEFECT NO.	c. DEFECT CLASSIFICATION
		☐ MINOR ☐ MAJOR ☐ CRITICAL

14. NAME OF LOWEST PART / ASSEMBLY AFFECTED

15. PART NO. OR TYPE DESIGNATION

16. LOT NO.

17. QTY

18. RECURRING DEVIATION / WAIVER ☐ YES ☐ NO

19. EFFECT ON COST / PRICE

20. EFFECT ON DELIVERY SCHEDULE

21. EFFECT ON INTEGRATED LOGISTICS SUPPORT, INTERFACE OR SOFTWARE

22. DESCRIPTION OF DEVIATION / WAIVER

23. NEED FOR DEVIATION / WAIVER

24. SERIAL NUMBER(S) AFFECTED

25. SUBMITTING ACTIVITY AUTHORIZED SIGNATURE

25.a. TITLE

26. APPROVAL / DISAPPROVAL a. RECOMMEND ☐ APPROVAL ☐ DISAPPROVAL

b. APPROVAL	c. GOVERNMENT ACTIVITY	SIGNATURE	DATE (YYMMDD)
☐ APPROVED ☐ DISAPPROVED			
d. APPROVAL	e. GOVERNMENT ACTIVITY	SIGNATURE	DATE (YYMMDD)
☐ APPROVED ☐ DISAPPROVED			

DD Form 1694, JUL 88 *Previous editions are obsolete.* 297-222

FIGURE 8. Request for Deviation/Waiver (DD Form 1694).

NOTICE OF REVISION (NOR)

(See MIL-STD-480 for instructions)

This revision described below has been authorized for the document listed.

DATE *(YYMMDD)*	*Form Approved* *OMB No. 0704-0188*

1. ORIGINATOR NAME AND ADDRESS	2. CAGE CODE	3. NOR NO.
	4. CAGE CODE	5. DOCUMENT NO.
6. TITLE OF DOCUMENT	7. REVISION LETTER *(Current)*	*(New)*
	8. ECP NO.	

9. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES

10. DESCRIPTION OF REVISION

11. THIS SECTION FOR GOVERNMENT USE ONLY

a. CHECK ONE

☐ EXISTING DOCUMENT SUPPLEMENTED BY THIS NOR MAY BE USED IN MANUFACTURE.

☐ REVISED DOCUMENT MUST BE RECEIVED BEFORE MANUFACTURER MAY INCORPORATE THIS CHANGE.

☐ CUSTODIAN OF MASTER DOCUMENT SHALL MAKE ABOVE REVISION AND FURNISH REVISED DOCUMENT TO:

b. ACTIVITY AUTHORIZED TO APPROVE CHANGE FOR GOVERNMENT	SIGNATURE AND TITLE	DATE *(YYMMDD)*
12. ACTIVITY ACCOMPLISHING REVISION	REVISION COMPLETED *(Signature)*	DATE *(YYMMDD)*

DD Form 1695, JUL 88 *Previous editions are obsolete.* 221 222

FIGURE 9. Notice of Revision (DD Form 1695).

SPECIFICATION CHANGE NOTICE

(See MIL-STD-480 for Instructions)

DATE *(YYMMDD)*	*Form Approved* *OMB No. 0704-0188*

1. ORIGINATOR NAME AND ADDRESS	2. ☐ PROPOSED ☐ APPROVED	3. CAGE CODE	4. SPEC. NO.
		5. CAGE CODE	6. SCN NO.

7. SYSTEM DESIGNATION	8. RELATED ECP NO.	9. CONTRACT NO.	10. CONTRACTUAL ACTION

11. CONFIGURATION ITEM NOMENCLATURE	12. EFFECTIVITY

THIS NOTICE INFORMS RECIPIENTS THAT THE SPECIFICATION IDENTIFIED BY THE NUMBER (AND REVISION LETTER) SHOWN IN BLOCK 4 HAS BEEN CHANGED. THE PAGES CHANGED BY THIS SCN BEING THOSE FURNISHED HEREWITH AND CARRYING THE SAME DATE AS THIS SCN. THE PAGES OF THE PAGE NUMBERS AND DATES LISTED BELOW IN THE SUMMARY OF CHANGED PAGES, COMBINED WITH NON-LISTED PAGES OF THE ORIGINAL ISSUE OF THE REVISION SHOWN IN BLOCK 4, CONSTITUTE THE CURRENT VERSION OF THIS SPECIFICATION.

13. SCN NO.	14. PAGES AFFECTED BY THIS SCN *(Indicate deletions)*	* S	* A	15. APPROVAL DATE

16. SCN NO.	17. RELATED ECP NO.	18. SUMMARY OF PREVIOUSLY CHANGED PAGES	19. DATE SUBMITTED	* S	* A	20. APPROVAL DATE

21. GOVERNMENT ACTIVITY	SIGNATURE	DATE *(YYMMDD)*

* "S" indicates supersedes earlier page. "A" indicates added page.

DD Form 1696, JUL 88 *Previous editions are obsolete.*

FIGURE 10. Specification Change Notice (DD Form 1696).

SPECIFICATION CHANGE NOTICE

(See MIL-STD-480 for Instructions)

DATE (YYMMDD): *Submittal Date*

Form Approved OMB No. 0704-0188

1. ORIGINATOR NAME AND ADDRESS	2.	3. CAGE CODE	4. SPEC. NO.
SCN Preparing Activity	[X] PROPOSED [ ] APPROVED	*Design Activity*	*Specification Being Changed*
		5. CAGE CODE: *SCN Preparing Activity*	6. SCN NO.: *SCN Being Submitted*

7. SYSTEM DESIGNATION	8. RELATED ECP NO.	9. CONTRACT NO.	10. CONTRACTUAL ACTION
Type, Model, Series, etc.		*If Applicable*	*See NOTE Below*

11. CONFIGURATION ITEM NOMENCLATURE	12. EFFECTIVITY
Name of Configuration Item Affected by this SCN	*Serial Numbers of all Configuration Items Affected by this SCN*

THIS NOTICE INFORMS RECIPIENTS THAT THE SPECIFICATION IDENTIFIED BY THE NUMBER (AND REVISION LETTER) SHOWN IN BLOCK 4 HAS BEEN CHANGED. THE PAGES CHANGED BY THIS SCN BEING THOSE FURNISHED HEREWITH AND CARRYING THE SAME DATE AS THIS SCN. THE PAGES OF THE PAGE NUMBERS AND DATES LISTED BELOW IN THE SUMMARY OF CHANGED PAGES, COMBINED WITH NON-LISTED PAGES OF THE ORIGINAL ISSUE OF THE REVISION SHOWN IN BLOCK 4, CONSTITUTE THE CURRENT VERSION OF THIS SPECIFICATION.

13. SCN NO.	14. PAGES AFFECTED BY THIS SCN *(Indicate deletions)*	* S	* A	15. APPROVAL DATE
3	*Pages Changed and Transmitted Herewith* *6* *7* *7a* *12 Deleted*	*X* *X*	*X*	

16. SCN NO.	17. RELATED ECP NO.	18. SUMMARY OF PREVIOUSLY CHANGED PAGES	19. DATE SUBMITTED	* S	* A	20. APPROVAL DATE
1	*2-R1*	*1, 2*	*880219*	*X*		*880311*
2	*3-R2*	*11*	*880425*	*X*		*880518*
4	*6*	*Disapproved*	*880411*			
5	*7-C1*	*9, 15, 21*	*880412*	*X*		
6	*8*	*4, 8, 12*	*880415*	*X*		

NOTE *Contractual action implementing this SCN, e.g., Contract Change Order, Supplemental Agreement, etc.*

21. GOVERNMENT ACTIVITY	SIGNATURE	DATE (YYMMDD)
Contracting Agency Technical Concurrence		*Approval Date*

* "S" indicates supersedes earlier page "A" indicates added page

DD Form 1696, JUL 88

Previous editions are obsolete.

FIGURE 11. Sample SCN (DD Form 1696).

(Originator name, address, date and standard message transmittal information not shown below)

CAGE Code **Government Contract No.**

ECP Number

1. **Urgent (or emergency) priority engineering change action affecting** _____
   (Show contract item nomenclature, part number or type designation.)

   is required because _____
   (State reason for action and reference applicable documents.)

2. **Action required to correct the condition(s) noted by the urgent (or emergency) condition is:**

   (This paragraph shall provide a description of the proposed engineering change.)

3. **The ECP shall be accomplished on serial numbers** _____ **at an estimated cost of** _____ **against contracts:**

   (Show breakout by contract number.)

4. **The following support equipment must be modified (or new support equipment must be delivered) concurrently with this change:**

   (If there is no effect on support equipment, include a statement to that effect.)

5. **Interim support to be provided:** **(address applicable areas)**
   - **a. Spares**
   - **b. Technical Manuals**
   - **c. Training**
   - **d. Software**
   - **e. Other**

6. **Additional information may be included when available. However, reporting and initiating action to correct urgent or emergency conditions shall not be delayed pending the availability of additional information.**

7. **Point of contact for this change is** _____
   (Provide the name, code and phone number of the person to be contacted.)

FIGURE 12. ECP Message Format

APPENDIX A

INSTRUCTIONS FOR PREPARATION OF AN ECP UTILIZING DD FORMS 1692 THROUGH 1692-5

10. GENERAL

10.1 Scope. This appendix establishes uniform requirements for preparing ECP forms. This appendix is a mandatory and integral part of this standard. Information contained herein is intended to be used throughout the DoD establishment.

10.2 Application. The ECP package shall provide the information required by this appendix. Enclosures (supplemented with necessary exhibits, sketches and drawings) referenced in the blocks on the ECP forms shall be used when necessary to enable an understanding of the total impact of the change. For the purpose of this appendix, DD Forms 1692 through 1692-5 (see Figures 2 through 7) are the required forms to be used in processing an ECP. Local reproduction of DD Forms 1692 through 1692-5 is authorized.

20. APPLICABLE DOCUMENTS (See paragraph 2.)

30. DEFINITIONS

30.1 Definitions used in this appendix. For purposes of this appendix, the definitions contained in Section 3 of this standard shall apply.

40. GENERAL REQUIREMENTS

40.1 Computer software ECPs. If a computer software configuration item (CSCI) is affected, utilize Appendix F in conjunction with this appendix.

50. DETAILED REQUIREMENTS

50.1 ECP form, page 1. (See Figure 2.)

a. Date. Enter the submittal date of the ECP.

b. Procuring activity number. To be used by procuring activity for entry of internal processing number if desired.

50.1.1 Block 1. Originator name and address. Enter the name and address of the contractor or Government activity, submitting the ECP.

50.1.2 Block 2. Class of ECP. Enter I or II for the applicable ECP class as defined in 5.1 or 5.2.

50.1.3 Block 3. Justification code. Enter the justification code as defined by 5.1.3 which is applicable to proposed Class I engineering change.

CODES

A - Record only
B - Interface
C - Compatibility
D - Deficiency
O - Operational or logistics support
P - Production stoppage
R - Cost Reduction
S - Safety
V - Value engineering

50.1.3.1 Value engineering (VE) ECP. When the contract contains a VE clause, each VE ECP shall be identified both by the "V" in Block 3 and by the entry of the following notation at the top of page 1 of the ECP form: "VALUE ENGINEERING CHANGE PURSUANT TO CONTRACT CLAUSE."

50.1.4 Block 4. Priority. The contractor shall recommend a priority to the Government and enter an "E", "U", or "R" (Emergency, Urgent or Routine) as defined in 5.1.5.

50.1.5 Block 5. ECP designation.

a. Model/Type. Enter model or type designation of the configuration item for which this proposal is being filled out. For computer programs, enter the CSCI identification number.

b. CAGE code. Enter the CAGE code as shown in Defense Logistic Agency (DLA) cataloging Handbook H4/H8 for the activity assigning the ECP number.

c. System designation. The system or high level configuration item designation assigned by the Government shall be entered, if known.

d. ECP number. Once an ECP number is assigned to the first submission of a change proposal, that number shall be retained for all subsequent submissions of that change proposal. Unless otherwise authorized by the Government, one of the following methods of assigning ECP numbers may be used unless otherwise stated in the contract:

(1) ECP numbers shall run consecutively commencing with number 1, for the entire company or corporation, or ECP

numbers may be assigned in a separate series for each system that the contractor is producing.

(2) When an ECP is split into a basic ECP and related ECPs, the basic ECP shall be identified with the number prescribed above and each related ECP shall be identified by the basic number plus a separate dash number (see 4.3.3). The number of characters in the ECP number, dash number, type, amendment and revision identification shall not exceed 15.

(3) Other systems may be used provided the ECP number is unique for any corporation or company, and the 15 character limitation in paragraph (2) above is not exceeded.

e. Type. Enter either a "P" for preliminary, or "F" for formal. (See 5.1.4)

f. Revision. If an ECP is being revised, enter the proper identification of the revision, i.e., R1 for the first revision; R.. for subsequent revisions. (The date submitted shall be the date of the revised ECP.) (See 4.8)

g. Amendment. If an ECP is being amended, enter the proper identification of the amendment, i.e. A1 for the first amendment; A.. for subsequent amendments. (The date submitted shall be the date of the amendment.) (See 4.9)

50.1.6 Block 6. Baseline affected. Place an "X" in the box according to the baseline affected.

50.1.7 Block 7. Other systems/configuration items affected. Enter an "X" in the "yes" or "no" block, as applicable, to indicate whether there is an interface effect with other systems or configuration items. Supply details in Block 25.

50.1.8 Block 8. Specifications affected - test plan. If specifications or test plans cited in the contract are affected by the ECP, their identity by the CAGE code of the design activity, document number, revision letter and the SCN or NOR number of the SCN or NOR being submitted, shall be entered.

50.1.9 Block 9. Drawings affected. Enter the indicated information for all drawings affected by the ECP. The CAGE code to be entered is that of the design activity whose number is assigned to the listed drawing(s). An additional sheet to DD form 1692, page 1 will be used as necessary. If more than three drawings are affected, make direct reference to the enclosure and paragraph containing the list of all the affected drawings.

50.1.10 Block 10. Title of change. Enter a brief title to identify the component or system affected by the ECP. Do not include the purpose or description which are to be entered in Block 16.
For example: F-18 Aircraft Air Turbine Start Connector Backshell Replacement; AN/AYK-14(v) CP 1502/CP-1503 Reconfiguration to CP-1799.

50.1.10.1 Block 10a. Weapon system code or designation. Enter the appropriate weapon system code or designation. (For example, AH-64 Apache, code - AIC; MK 48 Torpedo, code - FTL; or, F-16 Falcon, code - AFH.) Refer to DoD Procurement Coding Manual DoD 4105.61M for additional system and equipment codes.

50.1.11 Block 11. Contract number and line item. Enter the number of the current production contract and the line item number, or in the case of a Government proposed change, the task number under which the ECP will be funded and implemented.

50.1.12 Block 12. Procuring contracting officer. Enter the procuring contracting officer's name, code and telephone number applicable to the configuration item shown in Block 13.

50.1.13 Block 13. Configuration item nomenclature. Enter the Government assigned name and type designation, CSCI name and number if applicable, or authorized name and number of the configuration item(s) affected by the ECP.

50.1.14 Block 14. In production. The "yes" box shall be marked if deliveries have not been completed on the contract(s); whereas, the "no" box shall be marked if the deliveries have been completed.

50.1.15 Block 15. Lowest assembly affected. An appropriate, complete descriptive name of the part(s) shall be given here without resorting to such terms as "Numerous bits and pieces". The number(s) of the part(s) shall also be entered. Additionally, applicable national stock numbers (NSNs) shall be entered. An attached list may be used when necessary.

50.1.16 Block 16. Description of change. The description of the proposed change shall include the purpose and shall be given in sufficient detail to permit. It shall be phrased in definitive language such that, if it is repeated in the contractual document authorizing the change, it will provide the authorization desired. A description as to which part of the item or system is being changed shall be provided. Supplemental drawings and sketches shall be provided to the extent necessary to clearly portray the proposed change. If the proposed change is an interim solution, it shall be so stated. If additional space is needed, use continuation pages for details but provide an overview in this block.

50.1.17 Block 17. Need for change. Enter an explanation of the need for the change. The nature of the defect, failure, incident, malfunction,

etc. substantiating the need for the change shall be described in detail. Full utilization shall be made of available failure data. If a new capability is to be provided, improvements in range, speed, performance, endurance, striking power, defensive or offensive capabilities, etc. shall be described in quantitative terms. Correspondence establishing requirements for the change and any testing accomplished prior to the submission shall be identified and summarized. If the ECP is being submitted as a response to a request for ECP or Government direction, cite that authority herein. Additional pages may be added as required.

50.1.18 Block 18. Production effectivity by serial number. Enter the contractor's estimated production effectivity point for the production items, including serial number, or other item identification (e.g., block or lot number) as approved by the Government. Partial production installation of a change shall not be accomplished, unless specifically authorized by the Government. In determining the effectivity point for the proposed change, the contractor shall consider, in addition to the time factors, the availability of all support elements affected and the most economical point of introduction consistent with all the salient factors involved. The earliest production incorporation is not necessarily the singular or most important factor in the establishment of a proposed change effectivity point. The effectivity point will be based on concurrent availability of all logistics support elements and materials affected by the change to the item. Firm production effectivities should be indicated where the Government has so directed, or where the contractor has introduced a change into production, assuming related risks.

50.1.19 Block 19. Effect on production delivery schedule. State the estimated delivery schedule of items incorporating the change, either in terms of days after contractual approval, or by specific dates contingent upon contractual approval by a specified date. If there will be no effect on the delivery schedule, so state.

a. For a complex ECP, or for related ECPs, this delivery date will be repeated on the milestone chart, page 6, together with the schedule for other interrelated actions.

50.1.20 Block 20. Retrofit.

a. Recommended item effectivity. When the contractor recommends that the engineering change be accomplished in accepted items by retrofit (see Block 40), the quantities and serial (or lot) numbers of accepted and unaccepted items in which the change will not be incorporated in production shall be entered in Block 20a, or in a referenced enclosure. Such statement regarding items currently in production shall be based upon the estimated approval date of the ECP.

b. Estimated kit delivery schedule. State estimated kit delivery schedule by quantity and date. When special tooling for retrofit is required for Government use, reference an enclosure in Block 20b on which is specified the dates of availability of tools, jigs and test equipment required in conjunction with the kits to accomplish the change.

c. Ship/vehicle class affected. When the delivered configuration item is installed in one or more ship/vehicle classes, enter the identification of such classes.

d. Locations or ship/vehicle numbers affected. State the location(s) at which retrofit is to be accomplished. If retrofit is to be accomplished in ships (or in vehicles for which the serial numbers are not shown in Block 20a), enter the ship hull numbers (or vehicle numbers).

50.1.21 Block 21. Estimated costs/savings under contract. Enter the total estimated costs/savings impact of the ECP on the contract for the subject configuration item. This figure normally will be the same as that in column 5, line e, of page 4. (Savings shall be shown in parentheses.)

50.1.22 Block 22. Estimated net total costs. Enter the total estimated costs/savings impact of the basic and all related ECPs, including other costs/savings to the Government. This figure normally will be the same as that in column 4, line e, of page 5.

50.1.23 Block 23. Submitting activity authorized signature. An authorized official of the activity entered in Block 1 shall affix their signature in this block and title in Block 23a. This indicates the ECP has the official sanction of the submitting activity.

50.1.24 Block 24. Government approval/disapproval. Unless otherwise specified by the procurement contract, the CAO will review all contractor ECPs recommending approval or disapproval of Class I ECPs by marking Block 24a, or providing concurrence or non-concurrence in classification for Class II changes by marking Block 24c, and completing Block 24d. When the procuring activity requires approval of Class II changes prior to contractor implementation and has delegated authority to the CAO, the CAO will complete Blocks 24b and 24d. Blocks 24e and 24f are for use by the procuring activity. If a proposed change is disapproved, reasons for disapproval shall be provided to the ECP originator by the disapproving agency within 10 work days.

50.2 ECP form, page 2, Effects on functional/allocated configuration identification. This page (see Figure 3) is to be completed only if the proposed change affects the system specification or the item development specification(s). If a separate product function specification is used,

effects on such specification of changes proposed after the product baseline has been established shall be described either on page 3 (DD Form 1692-2) or on enclosures referenced thereon.

50.2.1 Originator name and address. Repeat the entry from Block 1 of page 1.

a. Procuring activity number. To be used by procuring activity for entry of internal processing number if desired.

b. ECP number. Enter the same ECP number as in Block 5d of page 1. If the ECP number is assigned on the basis of the system, the system designation also shall be given.

50.2.2 Block 25. Other systems affected. Insert data when Block 7 of DD Form 1692 is checked "yes".

50.2.3 Block 26. Other contractors/activities affected. Identify the other contractors or Government activities which will be affected by this engineering change.

50.2.4 Block 27. Configuration items affected. Enter the names and numbers of all CIs, CSCIs, maintenance and operator training equipment and support equipment affected.

50.2.5 Block 28. Effects on performance allocations and interfaces in system specification. Describe in this block the changes in performance allocations and functional interfaces defined in the system specification.

50.2.6 Block 29. Effects on employment, integrated logistic support, training, operational effectiveness or software. Describe the effects of the proposed change on employment, deployment, logistics, and/or personnel and training requirements which have been specified in the approved system specification, including any changes or effects on the operability of the system. In particular, there shall be an entry detailing any effect on interoperability.

50.2.7 Block 30. Effects on configuration item specifications. The effect of the proposed change on performance shall be described in quantitative terms as it relates to the parameters contained in the configuration item development specifications (see MIL-STD-490).

50.2.8 Block 31. Developmental requirements and status. When the proposed engineering change requires a major revision of the development program (e.g., new prototypes, additional design review activity , tests to be reaccomplished) the nature of the new development program shall be described in detail, including the status of programs already begun. In addition, for computer software, specific information shall be entered in

this block to identify significant requirements for computer program redesign, recoding, repetition of testing, special installation, adaptation, checkout, or live environment testing, and to identify the specific impact of these factors on existing schedules for completion. The impact of the software change on hardware design and input/output cabling shall also be detailed.

50.2.9 Block 32. Trade-offs and alternative solutions. A summary of the various solutions considered shall be included with an analysis showing the reasons for adopting the solution proposed by the ECP.

50.2.10 Block 33. Date by which contractual authority is needed. Enter the date contractual authority will be required in order to maintain the established schedule.

50.3 ECP form, page 3, Effects on product configuration identification, logistics and operations. Certain information required on this form (see Figure 4) also may have been required on page 1 or 2. When already supplied, a cross-reference to such information will be adequate. If any specific logistic interoperability factors are affected, the contractor shall provide information detailing the possible impact on the operational configuration on an attached page.

50.3.1 Originator name and address. Repeat the entry from Block 1 of page 1.

a. Procuring activity number. To be used by procuring activity for entry of internal processing number if desired.

b. ECP number. Enter the same ECP number as in Block 5d of page 1. If the number is assigned by system, include the system designation.

50.3.2 Block 34. Effect on product configuration identification or contract. The effects on the approved CI specifications shall be described by reference to the SCNs, NORs or other enclosure(s) which cover such proposed text changes in detail. The effects on performance, weight, moment, etc., which are covered in the enclosure(s), shall be indexed by proper identification adjacent to the factor affected. The effects on drawings, when not completely covered on page 1, shall be described in general terms by means of a referenced enclosure. Such enclosure may consist of a list of enclosed NORs if submittal of an NOR for each drawing affected is a requirement of the contract. Address nomenclature change when applicable.

50.3.3 Block 35. Effect on integrated logistics support (ILS) elements. The effects of the engineering change on logistic support of the item shall be indicated by checking all the appropriate boxes. These

effects shall be explained in detail on an enclosure indexed by appropriate identification adjacent to the subject under discussion. The information required shall indicate the method to be used to determine the integrated logistic support plans and items which will be required for the support of the new configuration as well as retrofitting previously delivered items to the same configuration. The following shall be covered as applicable:

a. Effects on schedule and content of the ILS plan.

b. Effect on maintenance concept and plans for the levels of maintenance and procedures.

c. System and or CI logistics support analysis (LSA) tasks (MIL-STD-1388-1) to be accomplished and LSA data (MIL-STD-1388-2) requiring update wherever it exits in the contract.

d. Extension/revision of the interim support plan.

e. Spares and repair parts that are changed, modified, obsoleted or added, including detailed supply data for interim support spares.

NOTE: Failure to include detailed supply data will delay ECP processing.

f. Revised or new technical manual/programming tapes.

g. Revised or new facilities requirements and site activation plan.

h. New, revised, obsoleted or additional support equipment (SE), test procedures and tapes. For items of SE and trainers which require change, furnish a cross reference to the related ECPs, and for any related ECP not furnished with the basic ECP, furnish a brief description of the proposed change(s) in SE and trainers.

i.,k. Qualitative and quantitative personnel requirements data which identify additions or deletions to operator or maintenance manpower in terms of personnel skill levels, knowledge and numbers required to support the CI as modified by the change.

j.,l. New operator and maintenance training requirements in terms of training equipment, trainers and training programs for operator and maintenance courses. This information should include identification of specific

courses, equipment, technical manuals, personnel, etc. required to set up the course at either the contractor or Government facility.

m. Any effect on contract maintenance that increases the scope or dollar limitation established in the contract.

n. Effects on packaging, handling, storage and transportability resulting from changes in materials, dimensions, fragility, inherent environmental or operating conditions.

o. Other considerations as appropriate. (For example, provisioning technical documentation.)

50.3.4 Block 36. Effect on operational employment. The effects of the engineering change on configuration item utilization shall be indicated by checking the appropriate factors and providing details by enclosures. Quantitative values shall be used whenever practicable but are required when reliability and service life are impacted. Survivability includes nuclear survivability.

50.3.5 Block 37. Other considerations. The effects of the proposed engineering change on the following shall be identified on an enclosure indexed by appropriate identification adjacent to the factor affected:

a. Interfaces having an effect on adjacent or related items, (output, input, size, mating connections, etc.).

b. GFE or GFP changed, modified or obsoleted.

c. Physical constraints. Removal or repositioning of items, structural rework, increase or decrease in overall dimensions.

d. Computer programs requiring a change to an existing program, resources or addition of a new program.

e. Rework required on other equipment not included previously which will effect the existing operational configuration.

f. Additional or modified system test procedures required.

g. Any new or additional changes having an effect on existing warrantees or guarantees.

h. Changes or updates to the parts control program.

50.3.6 Block 38. Alternative solutions. A summary of the various alternative solutions considered, including the use of revised operation or maintenance procedures, revised inspection or servicing requirements, revised part replacement schedules, etc., shall be included. The contractor shall provide an analysis of the alternatives, identify the advantages and disadvantages inherent in each feasible alternative approach, and show the reasons for adopting the alternative solution proposed by the ECP.

50.3.7 Block 39. Developmental status. When applicable, the contractor shall make recommendations as to the additional tests, trials, installations, prototypes, fit checks, etc., which will be required to substantiate the proposed engineering change. These recommendations shall include the test objective and test vehicle(s) to be used. The contractor shall indicate the development status of the major items of GFE/CFE and SE which will be used in conjunction with the change and the availability of the equipment in terms of the estimated production incorporation point.

50.3.8 Block 40. Recommendations for retrofit. When applicable, the contractor shall make recommendations for retrofit of the engineering change into accepted items with substantiating data, any implications thereto, and a brief description of the action required. Where retrofit is not recommended, an explanation of this determination shall be provided. Reference shall be made to any enclosure required to state recommended retrofit effectivity (see Block 20a).

50.3.9 Block 41. Work-hours per unit to install retrofit kits. Complete Blocks 41a through 41d to show the amount of work which must be programmed for various activities to install retrofit kits. Estimate work-hours to install retrofit kits when weapon system is undergoing overhaul.

50.3.10 Block 42. Work-hours to conduct system tests after retrofit. Enter the work-hours required to test the system or the item following installation of the retrofit kit.

50.3.11 Block 43. Change accomplishment. Where previously approved engineering changes must be incorporated in a specific order in relation to the proposed change, such order should be specified.

50.3.12 Block 44. Contractor field service engineering required. Check applicable box. If "yes" attach proposed program for contractor participation.

50.3.13 Block 45. Out of service time. Estimate the total time period from removal of the equipment from operational service until equipment will be returned to operational status after being retrofitted.

50.3.14 Block 46. Effect of this ECP and previously approved ECPs on item. The contractor shall summarize the cumulative effect upon performance, weight, electrical load, etc., of this ECP and previously approved ECPs when design limitations are being approached or exceeded. Consequences of ECP disapproval may be stated in this block or in a referenced enclosure.

50.3.15 Block 47. Date contractual authority is needed. The contractor shall provide the date by which contractual authority to proceed is needed to maintain the estimated effectiveness specified in the ECP and to provide concurrent integrated logistics support and logistics support item deliveries. The contractor should consider the targets for decision (see 4.4.2) allowing additional time for review, mailing and other incidental handling and processing requirements.

50.4 ECP form, page 4, Estimated net total cost impact. Page 4 (see Figure 5) is intended as the summary of the estimated net total cost/savings impact of a single ECP. In Blocks 48a through d, each cost factor associated with the ECP shall be considered as to whether such cost or portion thereof under the subject contract is recurring or nonrecurring. Enter cost/savings in columns 1 and 4, as applicable, using entries in the "unit" and "quantity" columns when appropriate. Savings shall be enclosed with parentheses. Other costs/savings to the Government resulting from approval of this ECP shall be entered in column 6 to the extent these costs can be determined by the contractor. This estimate of cost impact will be used for planning purposes and for a cost reduction or value engineering ECP analysis as to the net saving that would result. Firm cost proposals shall be submitted on standard form (SF) 1411, together with the appropriate cost breakdown. If an ECP affects items being delivered to more than one service, a separate page 4 shall be filled out for the quantities to be delivered to each service. Unless otherwise prescribed, costs of special tooling, scrap, redesign, etc. shall be divided between the using services on the basis of the percent of items furnished to each. The cost analysis applicable to each service shall be appropriately labeled at the top of the form. For CSCIs, page 4 shall not be used; however, net total cost estimates shall be based on all impact factors identified in the relevant blocks of the ECP form, pages 1 and 2, and shall be reported as part of Block 21. A separate page detailing the CSCIs cost estimates and impact factors shall be attached to the ECP form.

50.4.1 Originator name and address. Repeat the entry from Block 1 of page 1.

a. Procuring activity number. To be used by procuring activity for entry of internal processing number if desired.

b. ECP number. Enter the same ECP number as in Block 5d of page 1. If the number is assigned by system, include system designation.

50.4.2 Block 48a. Production costs/savings. Enter the estimate of costs/savings applicable to production of the CI resulting from incorporation of the change. Show redesign costs for the CI in the block titled "engineering, engineering data revisions" when the item is in production. Enter the subtotal of production costs (both nonrecurring and recurring) in the fifth column.

50.4.2.1 Block 48b. Retrofit costs. Enter the estimate of costs applicable to retrofit of the item, including installation and testing costs. Show design costs of the retrofit kit and data revision costs strictly related to retrofit when the CI is in production; show all redesign and data revision costs when the item is not in production. Costs of modifications required to existing GFE and subsequent testing also shall be shown. Enter the subtotal of retrofit costs in the fifth column.

50.4.2.2 Block 48c. Integrated logistic support costs/savings. Enter the estimated cost of the various elements of ILS applicable to the item covered by the ECP. On the line titled "Interim support," estimated costs shall be entered based upon the period of time between initial installation/operation of the item (aircraft, tank, etc.) as modified by the ECP and Government attainment of support capability. Such "interim support" costs shall include costs estimates of contractor recommended/provided spares and repair parts, special support equipment, training equipment and personnel training program. On the line titled "maintenance manpower" shall be entered the estimated costs/savings for the contracted maintenance support for the remainder of existing maintenance contracts. Other ILS costs/savings associated with ILS elements for which appropriate titles do not appear in Block 48c may be entered in place of a factor not used unless such costs are covered on page 5 or in related ECPs. Enter the subtotal of ILS costs/savings in column 5.

50.4.2.3 Block 48d. Other costs. If there are other costs under the contract which do not fall under the production, retrofit or ILS headings, enter the total of such costs in Block 48d, column 5. If there are other costs to the Government which do not fall under the production, retrofit or ILS headings or under Block 48g (coordination changes by the Government), enter the total of such costs in Block 48d, column 6.

50.4.2.4 Block 48e. Subtotal costs/savings. Enter the subtotals of columns 1, 4, and 5 on this line. The subtotal in column 5 shall be the sum of columns 1 and 4. This subtotal under the contract then shall be entered on the line so titled in column 6 and on page 1, Block 21.

50.4.2.5 Block 48f. Coordination of changes with other contractors. This term applies to interface changes to items other than GFE, changes to GFE being covered under 48b. If such coordination changes are covered by related ECPs and summarized on page 5, the estimated costs thereof, shall not be entered in Block 48f. However, if page 5 is not required, or if costs of certain coordination changes are not tabulated on page 5, an estimate of such costs shall be entered in Block 48f when available.

50.4.2.6 Block 48g. Coordination changes by Government. Enter in this block an estimate of the cost to the Government of interface changes which must be accomplished in delivered items (aircraft, ships, facilities, etc.) to the extent such costs are not covered in Block 48b or on page 5.

50.4.2.7 Estimated net total costs/savings. Enter the sum of the preceding four lines of column 6 and on page 1, Block 22.

50.5 ECP form, page 5, Estimated costs/savings summary, related ECPs. Page 5, (see Figure 6), is intended as the summary of the estimated net total cost impact of both the package of related ECPs and other associated new requirements which are needed to support the modified items. A few revised requirements for ILS, such as ILS plans (49.c.7 on page 5) and maintenance concept (49.c.8 on page 5) do not appear as headings on page 4. When only a single ECP is involved, these additional costs for revision of ILS plans, etc. should be shown on page 4 under the ILS heading, and page 5 may be omitted.

a. Responsibility for preparation:

(1) Prime contractor. The prime contractor shall summarize the costs/savings of all related ECPs for which the prime contractor is responsible, on page 5. If there is no system integrating contractor, the prime contractor submitting the basic ECP (see 4.3.4) also shall include the costs of related ECPs being submitted by other affected contractors to the extent such information is available.

(2) System integrating contractor. When a system integrating contractor (or coordinating contractor) has contractual responsibility for coordination of ECPs, such system integrating contractor shall summarize the costs of related ECPs of the several primes involved in an interface or interrelated ECP on page 5 of the ECP form and shall attach this page to the ECP package.

b. Summarization techniques. The costs of certain related ECPs are entirely ILS costs. Thus costs of ECPs for trainers, other training equipment and SE shall be listed in total under the "ILS costs" heading. Other ECPs

(applicable to weapons, aircraft, tanks, subsystems thereof, etc.) shall be split into the four subtotals of "production," "retrofit," "ILS," and "other costs" for entry on page 5. The sum of the four subtotals attributed on page 5, column (3), to an individual ECP should agree with the subtotal of costs/savings under contract, line e, column (5) of page 4 of that ECP. Cost breakdowns should be arranged in such manner that costs/savings are neither included more than once on the summary nor omitted. The purpose of the grouping on the cost summary is to arrive at a total ILS cost, as well as a net total cost of all actions, for the complete group of related ECPs.

50.5.1 Originator name and address. Enter information pertinent to the contractor or activity preparing this page.

a. Procuring activity number. To be used by procuring activity for entry of internal processing number if desired.

b. ECP number. Enter the same ECP number as in Block 5d of page 1. If the number is assigned by system, include system designation.

50.5.2 Block 49a. Production costs/savings. Enter the ECP number in column (2) and in columns (3) and (4) the production subtotals from columns (5) and (6) respectively, of Block 48a of each ECP applicable to weapons, aircraft, tanks, subsystems thereof, etc. (Note that total costs of ECPs on trainers, training equipment and SE are entered in Block 49c.)

50.5.3 Block 49b. Retrofit costs/savings. Retrofit costs may be charged by the Government to production funds or maintenance funds or may be split between the two. The type of funds used depends upon the phase in the items life cycle. If the practice of the procuring activity in this regard is known to the originator of page 5, retrofit costs shall be entered in, or split between, Blocks 49b and 49.c.1, as appropriate. If such practice is unknown, enter in Block 49b the ECP number and the retrofit subtotals from the columns (5) and (6) of Block 48b for each applicable ECP.

50.5.4 Block 49c. ILS costs/savings. Enter retrofit costs in Block 49.c.1, if appropriate (see 50.5.2.3). Enter in Block 49.c.2 the ILS subtotals from columns (5) and (6) of Block 48c of each ECP applicable to weapons, aircraft, tanks, subsystems thereof, etc. As stated in 50.2, enter costs of ECPs for ILS items in Blocks 49.c.3, 4, 5 and 6. Enter costs of revision or preparation of ILS plans for the configuration item or complete system in Block 49.c.7. Enter in Block 49.c.9 costs of revision of the interim support plan to the extent such costs have not already been covered under Block 48c of page 4 of the applicable ECPs.

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Enter in Blocks 49.c.10 through 49.c.18 the costs of all new requirements for ILS not covered by ECPs, such costs being broken down into nonrecurring and recurring costs, as appropriate, and totalled in column (3).

50.5.5 Block 49d. Other costs/savings. Enter in Block 49d the sum of the "other costs" totals from column (5) and (6) of Block 48d of each ECP applicable to weapons aircraft, tanks, subsystems thereof, etc.

a. Subtotals of columns. Enter the subtotals of columns (3) and (4) on this line. The subtotal under contract(s) shall then be entered on the line so titled in column (4).

50.5.6 Block 49e. Estimated net total costs/savings. Enter the sum of the preceding two lines of column 4.

50.6 ECP form, page 6, Milestone chart. See 5.1.6.3 and 50.1.19 for information as to when page 6 (see Figure 7) is or is not required. An equivalent format may be substituted for page 6 of the ECP if an improved milestone chart for the particular application can be presented by use of an equivalent form.

50.6.1 Originator name and address. Enter information pertinent to the contractor or activity preparing this page.

a. Date. Enter the submittal date.

b. ECP number. Enter the same ECP number as in Block 5d of page 1. If the number is assigned by system, include system designation.

c. Procuring activity number. To be used by procuring activity for entry of internal processing number if desired.

d. CAGE code. Enter the CAGE code for the activity assigning the ECP number.

e. ECP number. Enter the number of the basic and related ECPs if applicable.

f. Configuration item nomenclature. Enter the Government assigned name and type designation, CSCI name and number if applicable, or authorized name and number of the configuration item(s) affected by the ECP.

g. Title of change. Enter a brief title to identify the component or system affected by the ECP. It shall not include the purpose or description.

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50.6.2 Milestone chart symbols. Enter symbols on the chart in the manner illustrated by page 6 to show the time phasing of the various deliveries of items, SE, training equipment and documentation incorporating the basic and related ECPs. Enter other symbols and notations to show the initiation or termination of significant actions. All dates are based upon months after contractual approval of the basic ECP.

50.6.3 ECP form continuation pages. Continuation pages should have the same heading as previous ECP pages including the ECP number. These pages shall address the block numbers. Note: Do not use the designation; attachment ( ), enclosure ( ), etc. The continuation pages are to be numbered consecutively such as: Page 6 of 8, page 7 of 8, and page 8 of 8.

APPENDIX B

INSTRUCTIONS FOR THE PREPARATION OF
REQUEST FOR DEVIATION UTILIZING
DD FORM 1694

10. GENERAL

10.1 Scope. This appendix establishes uniform requirements for preparing requests for deviations. This appendix is a mandatory and integral part of this standard. Information contained herein is intended to be used throughout the DoD establishment.

10.2 Application. DD Form 1694, (see Figure 8), or authorized alternative shall be completed when the contractor deems it necessary to depart temporarily from the applicable technical requirements. Local reproduction of DD Form 1694 is authorized.

20. APPLICABLE DOCUMENTS (See paragraph 2.)

30. DEFINITIONS

30.1 Definitions used in this appendix. For purposes of this appendix, the definitions contained in Section 3 of this standard shall apply.

40. GENERAL REQUIREMENTS

Not applicable

50. DETAILED REQUIREMENTS

50.1 Deviation/waiver form. (See Figure 8.)

a. Date. Enter the the submittal date.

b. Procuring activity number. To be used by procuring activity for entry of internal processing number if desired.

50.1.1 Block 1. Originator name and address. Enter the name and address of the contractor, or Government activity, submitting the request for deviation.

50.1.2 Block 2. Deviation or waiver. Enter an "X" in the deviation box.

50.1.3 Block 3. Classification. The deviation shall be designated minor, major, or critical in accordance with the applicable definition of 5.3.1.1, 5.3.1.2 or 5.3.1.3 by entry of an "X" in the proper box.

50.1.4 Block 4. Designation for deviation/waiver. See Appendix A, 50.1.5.

50.1.4.1 Block 4a., b. and c. See Appendix A, 50.1.5 a, b, and c.

50.1.4.2 Block 4d. Deviation number. Instructions in 50.1.5 of Appendix A apply with the term "Request for Deviation" substituted for "ECP". Deviation identification numbers shall be distinct from ECP or waiver numbers. Contractors shall include the letter "D" as part of the deviation number.

50.1.5 Block 5. Baseline affected. Check the applicable box for the affected baseline.

50.1.6 Block 6. Other affected CIs. Check applicable box. If yes, provide summary data in Block 22.

50.1.7 Block 7. Specifications affected - test plan. If the deviation is a deviation from or affects a specification or test plan, enter the identification of such document(s) (see 50.1.8 of Appendix A).

50.1.8 Block 8. Drawings affected. If the deviation is a deviation from a drawing or drawings, enter the identification of such drawing(s) (see 50.1.9 of Appendix A) and outstanding NORs (not yet incorporated on original drawings).

50.1.9 Block 9. Title of deviation/waiver. Enter a brief descriptive title of the deviation.

50.1.9.1 Block 9a. Weapon system code or designation. Enter the appropriate weapon system code or designation. (For example, AH-64 Apache, code - AIC; MK 48 Torpedo, code - FTL; or, F-16 Falcon, code - AFH.) Refer to DoD Procurement Coding Manual DoD 4105.61M for additional system and equipment codes.

50.1.10 Block 10. Contract number and line item. Enter the number of the prime contract and line item.

50.1.11 Block 11. Procuring contracting officer. Enter the procuring contracting officer's name, code and telephone number applicable to the CI shown in Block 12.

50.1.12 Block 12. Configuration item nomenclature. Enter the Government assigned name and type designation, if applicable, or authorized name and number of the CI to which the deviation will apply.

50.1.13 Block 13. Classification of defect.

a. CD number. If either a Government or contractors CD applies, enter the number assigned.

b. Defect number. If a CD applies, enter the defect number(s) which correspond(s) with the characteristic(s) from which an authorized deviation is desired.

c. Defect classification. If a CD applies check the box which states the proper classification of the defect number(s) entered in Block 13b. (See MIL-STD-109)

50.1.14 Block 14. Name of lowest part or assembly affected. An appropriate descriptive name of the part(s) shall be given here without resorting to such terms as "Numerous bits and pieces".

50.1.15 Block 15. Part number or type designation. Enter the part number(s) of the part(s) named in Block 14 or type designation if applicable.

50.1.16 Block 16. Lot number. If lot numbers have been assigned, enter the number(s) applicable to the lot(s) for which the deviation is being requested. Lot may also be defined by serial numbers of the affected items.

50.1.17 Block 17. Quantity. Enter the quantity of the items affected or period of time for which the deviation is being requested.

50.1.18 Block 18. Recurring deviation. Show whether the same deviation has been requested and approved for a previous contract or lot by placing an "X" in the proper box. If "yes," reference the previous correspondence, the request number and corrective action taken in Block 23.

50.1.19 Block 19. Effect on cost/price. Whenever a reduction of effort or material will result or the item will be restricted to limited use, enter the estimated reduction or price adjustment. If no change in price, cost, or fee is considered equitable, so state with rationale.

50.1.20 Block 20. Effect on delivery schedule. State the effects on the contract delivery schedule that will result from approval or disapproval of the request for deviation.

50.1.21 Block 21. Effect on integrated logistic support, interface, or software. If there is no effect on logistic support, interface or software, enter the words "No effect". If the deviation will have an impact on logistic support, interface or software, describe such effects on an enclosure and reference the enclosure in this block.

50.1.22 Block 22. Description of deviation. Describe the nature of the proposed departure from the technical requirements of the configuration identification. The deviation shall be analyzed to determine whether it affects any of the factors listed in Block 34 through 37 on page 3 of the ECP form. Describe any effect on each of these factors. Marked drawings should be included when necessary to provide a better understanding of the deviation.

50.1.23 Block 23. Need for deviation. Explain why it is impossible or unreasonable to comply with the configuration identification within the specified delivery schedule. Also explain why a deviation is proposed in lieu of a permanent design change. If the deviation is recurring, an explanation should be included as to the steps being taken to prevent a future recurrence.

50.1.24 Block 24. Serial number(s) affected. The contractor shall identify the affected items by serial number(s).

50.1.25 Block 25. Submitting activity authorized signature. An authorized official of the activity entered in Block 1 shall sign in this block and enter their title in Block 25a.

50.1.26 Block 26. Government approval/disapproval. If a Government representative is delegated responsibility only for review of deviations, check the box recommending approval or disapproval in Block 26a. When a Government representative is authorized by the procurement contract to approve or disapprove minor deviations and when a deviation properly classified as minor is submitted, such Government representative shall record their decision by checking either the "approved", or "disapproved" box in Block 26b and complete Block 26c. Blocks 26d and 26e are for use by the procuring activity when approval authority is retained at that level.

APPENDIX C

INSTRUCTIONS FOR THE PREPARATION OF REQUEST FOR WAIVER UTILIZING DD FORM 1694

10. GENERAL

10.1 Scope. This appendix establishes uniform requirements for preparing requests for waivers. This appendix is a mandatory and integral part of this standard. Information contained herein is intended to be used throughout the DoD establishment.

10.2 Application. A single DD Form 1694, (see Figure 8), or authorized alternative, shall be completed when the contractor desires authorization to deliver nonconforming items to the Government which do not comply with the applicable technical requirements. Local reproduction of DD Form 1694 is authorized.

20. APPLICABLE DOCUMENTS (See paragraph 2.)

30. DEFINITIONS

30.1 Definitions used in this appendix. For purposes of this appendix, the definitions contained in Section 3 of this standard shall apply.

40. GENERAL REQUIREMENTS

Not applicable

50. DETAILED REQUIREMENTS

50.1 Deviation/waiver form. (See Figure 8.)

a. Date. Enter the submittal date of the waiver.

b. Procuring activity number. To be used by procuring activity for entry of internal processing number if desired.

50.1.1 Block 1. Originator name and address. Enter the name and address of the contractor, or Government activity, submitting the request.

50.1.2 Block 2. Deviation or waiver. Enter an "X" in the waiver box.

50.1.3 Block 3. Classification. The waiver shall be designated minor, major, or critical in accordance with the applicable definition of 5.4.1.1, 5.4.1.2 or 5.4.1.3 by entry of an "X" in the proper box.

50.1.4 Block 4. Designation for deviation/waiver. See Appendix A, 50.1.5.

50.1.4.1 Block 4a., b. and c. See Appendix A, 50.1.5 a, b, and c.

50.1.4.2 Block 4d. Waiver number. Enter the assigned waiver number.

50.1.5 Block 5. Baseline affected. Check the applicable box for the affected baseline.

50.1.6 Block 6. Other affected CIs. Check applicable box.

50.1.7 Block 7. Specifications affected - test plan. If the waiver affects a specification or test plan, enter the identification of such document(s) (see 50.1.8 of Appendix A).

50.1.8 Block 8. Drawings affected. Enter the identification of drawings affected (see 50.1.9 of Appendix A).

50.1.9 Block 9. Title of deviation/waiver. Enter a brief descriptive title of the waiver.

50.1.9.1 Block 9a. Weapon system code or designation. Enter the appropriate weapon system code or designation. (For example, AH-64 Apache, code - AIC; MK 48 Torpedo, code - FTL; or, F-16 Falcon, code - AFH.) Refer to DoD Procurement Coding Manual DoD 4105.61M for additional system and equipment codes.

50.1.10 Block 10. Contract number and line item. Enter the number of the production contract and line item number.

50.1.11 Block 11. Procuring contracting officer. Enter the procuring contracting officer's name, code and telephone number applicable to the CI shown in Block 12.

50.1.12 Block 12. Configuration item nomenclature. Enter the Government assigned name and type designation, if applicable, or authorized name and number of the CI to which the waiver will apply.

50.1.13 Block 13. Classification of defect.

a. CD number. If either a Government or contractors CD applies, enter the number assigned.

b. Defect number. If a CD applies, enter the defect number(s) which correspond(s) with the characteristic(s) from which an authorized waiver is desired.

c. Defect classification. If a CD applies check the box which states the proper classification of the defect number(s) entered in Block 13b. (See MIL-STD-109)

50.1.14 Block 14. Name of lowest part/assembly affected. An appropriate descriptive name of the part(s) shall be given here without resorting to such terms as "Numerous bits and pieces".

50.1.15 Block 15. Part number or type designation. Enter the part number(s) of the part(s) named in Block 14 or type designation if applicable.

50.1.16 Block 16. Lot number. If lot numbers have been assigned the number(s) applicable to the lot(s) for which the waiver is requested shall be entered. Lot may also be defined by serial numbers of the applicable items.

50.1.17 Block 17. Quantity. Enter the quantity of items affected by the waiver.

50.1.18 Block 18. Recurring waiver. Show whether the same waiver has been requested and approved for a previous contract or lot by placing an "X" in the proper box. If "yes," reference the previous correspondence, the request number and corrective actions taken, in Block 23.

50.1.19 Block 19. Effect on contract cost/price. If a reduction in contract price, cost, or fee is being offered for the nonconformance with technical requirements, state the proposed reduction here. If no change in price, cost, or fee is considered equitable, so state with rationale.

50.1.20 Block 20. Effect on delivery schedule. State the effects on the contract delivery schedule that will result from approval or disapproval of the request for waiver.

50.1.21 Block 21. Effect on integrated logistic support, interface, or software. If there is no effect on logistic support, interface, or software, enter the words "No effect". If the waiver will have an impact on logistic support, interface or software, describe such effects on an enclosure and reference the enclosure in this block.

50.1.22 Block 22. Description of waiver. Describe the nature of the nonconformance. The waiver shall be analyzed to determine whether it affects any of the factors listed in Block 34 through 37 on page 3 of the ECP form. Describe any effect on each of these factors. Marked drawings may be included when necessary to provide a better understanding of the waiver.

50.1.23 Block 23. Need for waiver. Explain why a waiver is required and what will be the impact if it is disapproved. If the waiver is recurring, an explanation should be made as to the steps being taken to prevent a future recurrence.

50.1.24 Block 24. Serial number(s) affected. The contractor shall identify the affected items by serial number(s).

50.1.25 Block 25. Submitting activity authorized signature. An authorized official of the activity entered in Block 1 shall sign in this block and enter their title in Block 25a.

50.1.26 Block 26. Government approval/disapproval. Normally the Government representative (CAO) is authorized by the procurement contract to approve or disapprove minor waivers. Their decision shall be recorded by checking either the "approved" or "disapproved" box in Block 26b and completing Block 26c. When the Government representative has not been delegated responsibility for approval or disapproval of major or critical waivers, check the box recommending approval or disapproval in Block 26a, and complete Block 26c. Such Government representative shall then forward the form to the procuring activity for final action and signature for approval or disapproval in Blocks 26d and 26e.

APPENDIX D

INSTRUCTIONS FOR PREPARATION OF NOTICE OF REVISION DD FORM 1695

10. GENERAL

10.1 Scope. This appendix establishes uniform requirements for preparing notices of revision. This appendix is a mandatory and integral part of this standard. Information contained herein is intended to be used throughout the DoD establishment.

10.2 Application. See 4.12 and 5.5 for NORs applicability. Local reproduction of DD Form 1695, (see Figure 9), is authorized.

20. APPLICABLE DOCUMENTS (See paragraph 2.)

30. DEFINITIONS

30.1 Definitions used in this appendix. For purposes of this appendix, the definitions contained in Section 3 of this standard shall apply.

40. GENERAL REQUIREMENTS

Not applicable

50. DETAILED REQUIREMENTS

50.1 Standardized requirements. To provide standardized requirements for preparing NORs, the following subparagraphs apply:

50.1.1 Block 1. Originator name and address. Enter the name and address of the contractor or Government activity submitting the proposed NOR.

a. Date. Enter the date of submittal of the NOR.

50.1.2 Block 2. CAGE code. Enter the originator's CAGE code of the activity whose NOR number is assigned.

50.1.3 Block 3. NOR number. Unless the use of a Government assigned number is prescribed, the originator shall either assign a number or enter the document number and new revision letter as the NOR number, or when the specification in the contract identifies the NOR by ECP number, with a dash number attached (i.e.xxx-1).

50.1.4 Block 4. CAGE code. Enter the CAGE code which appears on the document to which the revision applies.

50.1.5 Block 5. Document number. Enter the number of the drawing, standard, list or other document(s) to be revised.

50.1.6 Block 6. Title of document. Enter the title of the document to which the NOR applies.

50.1.7 Block 7. Revision letter.

a. Current. Show the existing revision of the document for which the NOR is prepared.

b. New. Show the revision letter proposed for the revision covered by the NOR. Usually the new letter will be the one following the current letter in alphabetical sequence, unless there are known outstanding NORs which may not have been incorporated.

NOTE: The Government may change the new revision letter proposed by the contractor in order to retain a proper sequence of approved revisions.

50.1.8 Block 8. ECP number. Enter the number of the ECP describing the engineering change which necessitates the document revision covered by this NOR. If the activity preparing the referenced ECP assigned ECP numbers by weapons systems, include the weapon system designation with the ECP number.

50.1.9 Block 9. Configuration item (or system) to which ECP applies. Enter Government assigned system designation (if any); otherwise, enter the name and type designation of the CI to which the ECP applies (see Blocks 5c, 5a and 12 on ECP Form 1692).

50.1.10 Block 10. Description of revision. Describe the revision in detail, giving the exact wording of sentences or paragraphs that are to be added, or that are to replace designated sentences or paragraphs of the current document. State the dimensions, tolerances and other quantitative requirements that are to replace current requirements. Attach a marked print when necessary to clearly explain the desired revision. Use a "From" - "To" format in the description of the change.

50.2 SECTION 11 - FOR GOVERNMENT USE ONLY

50.2.1 Block 11A. Document status. The Government approving activity will enter an "X" in the first box if manufacturer may proceed using the existing document as modified by this NOR. If so, a copy of the approved NOR will be furnished both to the contractor submitting the ECP and to the custodian of the master document. The Government approving activity will enter an "X" in the second box if the contractor is not authorized to incorporate the change proposed by the submitted NOR until receipt of the

revised document. When the custodian of the master document has not been furnished a standard distribution list for the subject CI (or system), the Government approving activity will check the third box and will enter instructions to the custodian regarding distribution of copies of the revised document. Such instructions may be in this space if there is sufficient room; otherwise, the distribution list may be entered above Block 11, on a referenced enclosure, or in a letter of transmittal.

50.2.2 Block 11B. Authorized activity.

50.2.2.1 Activity authorized to approve change. The name of the activity authorized to approve the ECP and the associated NORs for the Government will be entered by such activity.

50.2.2.2 Signature. If the referenced ECP is approved and the NOR also is approved as written or corrected, an authorized representative of the Government approving activity shall sign in this block, including entry of the date of approval.

50.2.3 Block 12. Activity.

50.2.3.1 Activity accomplishing revision. The name of the activity (custodian) that is directed to make the revision in the master document will be entered by the approving activity.

50.2.3.2 Revision completed. An authorized representative of the custodian shall sign in this block to certify that the revision described by the NOR has been accomplished, including entry of the date of the accomplishment The signed original shall be returned to the procuring activity or held by the activity that maintains the master document.

APPENDIX E

INSTRUCTIONS FOR PREPARATION OF SPECIFICATION CHANGE NOTICE (DD FORM 1696)

10. GENERAL

10.1 Scope. This appendix establishes uniform requirements for preparing the SCN form. This appendix is a mandatory and integral part of this standard. Information contained herein is intended to be used throughout the DoD establishment.

10.2 Application. The SCN form shall provide the information required by this appendix. DD Form 1696, (see Figure 10), is the required form to be used for processing an SCN unless a contractor format has been authorized by the Government. The SCN should only state the exact change proposed to the specification (see Figure 11 "Sample SCN"). Local reproduction of DD Form 1696 is authorized.

20. APPLICABLE DOCUMENTS (See paragraph 2.)

30. DEFINITIONS

30.1 Definitions used in this appendix. For purposes of this appendix, the definitions contained in Section 3 of this standard shall apply.

40. GENERAL REQUIREMENTS

40.1 Application. See 5.6 (including subparagraphs) that identifies situations under which an SCN is required.

40.2 Preparation of SCN form. The SCN shall provide the information required by 50.1 of this appendix and shall include detailed change information as required by 5.6. Any data which cannot be included in the block spaces allotted on the form shall be included in attachments referenced in the block.

40.3 Pages affected by this SCN and previously changed pages. The columnar sections of Form 1696, Blocks 13, 14, 15 (upper half), and Blocks 16, 17, 18, 19 and 20 (lower half), have been divided to clarify entries. Samples of entries to be made in this columnar section are provided in Figure 11 and explained in 50.1 of this appendix.

50. DETAILED REQUIREMENTS

50.1 Detailed instructions for completion of the DD Form 1696. Enter the submittal date of the SCN. Normally this date will be identical to the ECP submittal date.

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50.1.1 Block 1. Originator name and address. Enter the name and address of the contractor or Government activity which is preparing the SCN.

50.1.2 Block 2. Proposed SCN. Indicate by an "X" in the appropriate block if this is a proposed SCN. If the SCN is being submitted for technical approval, prior to distribution, both blocks should be left blank. The approved block will be marked by the procuring activity.

50.1.3 Block 3. CAGE code identification. Enter the CAGE Code of the design activity for the specification identified in block 4. DLA Cataloging Handbook H4/H8 contains these codes.

50.1.4 Block 4. Specification number. Enter the identification number, including revision letter, of the specification being changed.

50.1.5 Block 5. CAGE code identification. Enter the CAGE code of the activity preparing the SCN.

50.1.6 Block 6. SCN number. Enter the identification number for the SCN being submitted. SCN numbers are issued sequentially for each specification and revision, starting with the number "1".

50.1.7 Block 7. System designation. Enter the type, model, series (or the nomenclature number) for the system (or major item of equipment, if it is not a system) affected.

50.1.8 Block 8. Related ECP number. Enter the complete ECP number (including dash numbers, revisions and amendments) that identifies the related engineering change.

50.1.9 Block 9. Contract number. Enter the complete contract number(s) affected by this SCN, if applicable.

50.1.10 Block 10. Contractual action. For the approved SCN only, enter the number of the contract modification document used to contractually implement the change. If a unilateral change order is utilized for initial authorization, it's number shall be entered in this block. There should be no entry in this block on a proposed SCN.

50.1.11 Block 11. Configuration item nomenclature. Enter the nomenclature (name and number) of the configuration item affected by the change. Normally, this number will be different than the number listed in Block 7.

50.1.12 Block 12. Effectivity.

a. For hardware, enter the serial numbers of the items for which this SCN is effective. Usually this will include

the applicable production line items plus items approved for a retrofit or modification program.

b. For computer programs, enter the revision or version of the computer program to which the change applies. If a new version is warranted by the incorporation of this ECP, the new version number should be entered here.

50.1.13 Block 13. SCN number. Enter the identification number of the SCN being submitted.

50.1.14 Block 14. Pages affected by this SCN. (Indicate deletions). The entries in this section (upper half) shall provide information about the pages affected by the SCN being submitted. Enter a listing of all pages being changed by this SCN and indicate whether the pages are being superseded or added (by checking the S or the A column) or deleted (by printing the word "deleted" after the page numbers so affected). A separate line should be used for each category of page change.

50.1.15 Block 15. Approval date. Once the SCN has been approved by the procuring activity, enter the approval date (from Block 21) in this block.

50.1.16 Block 16. SCN number. For all SCNs previously submitted, enter the identification number of each SCN starting with SCN #1 at the top of the column.

50.1.17 Block 17. Related ECP number. Enter the related ECP number(s) (including revisions, amendments, and dash numbers) effected by each previously issued SCN against this specification.

50.1.18 Block 18. Summary of previously changed pages. List the pages changed by each previously issued SCN against this specification and indicate whether the pages are being superseded or added (by checking the S or the A column). A separate line should be used for each category of page change.

50.1.19 Block 19. Date submitted. Enter the submittal date for each previously submitted SCN that has been approved opposite the appropriate SCN number in column 16.

50.1.20 Block 20. Approval date. For each approved SCN previously submitted, enter its approval date on the same line as the SCN number in Block 16.

50.1.21 Block 21. Government activity. The Government contracting officer at the procuring activity, or a duly appointed representative shall affix signature and date in this block for approved SCNs only. The signature denotes technical concurrence with the contents of the DD Form

APPENDIX E

1696 and attached change pages and releases them for distribution.

APPENDIX F

GUIDANCE FOR THE TAILORING OF COMPUTER SOFTWARE ENGINEERING CHANGES

10. GENERAL

10.1 Scope. This appendix supplements ECP requirements by providing optional procedures for preparing, formatting, and processing changes to computer software configuration items (CSCIs), e.g., software.

10.2 Application. The requirements of this appendix are applicable to civilian and Government contractors involved with computer software CIs during the CSCI design, development, test, updating, and modification processes.

20. APPLICABLE DOCUMENTS (See paragraph 2.)

30. DEFINITIONS

30.1 Definitions used in this appendix. For purposes of this appendix, the definitions contained in Section 3 of this standard shall apply.

40. GENERAL REQUIREMENTS

40.1 Application. Paragraphs and subparagraphs of this document apply in whole toward application of processing a computer software change.

40.2 Preparation of ECP forms. Use the form and format illustrated in this standard for the preparation of all Class I ECPs, deviations, and waivers to CSCIs. Appendix A shall apply except as noted herein.

50. DETAILED REQUIREMENTS

50.1 Multiple CI/CSCI ECPs. When more than one CI/CSCI is affected by a relatively simple change under the cognizance of a single procuring activity, a single ECP with separate dash numbers for each CI/CSCI may be used in lieu of separate ECPs for each CI/CSCI.

50.2 Classification. Change classification shall be guided by 5.1 and 5.2 of this standard and will be either Class I or Class II.

50.2.1 Class II changes. Examples of a Class II change are: (a) a change in documentation only for which the source code is not impacted such as correction of errors, (b) maintenance type code corrections such as the clarifying of notes, (c) other changes of a minor nature such as the addition or modification of adaptation data and recompiling within specified limits. No Class II change shall affect program logic, design or mathematical formulation. Class II changes such as these may require

changes to source code listings, object code listings or design documents included in the appendices of the product specification. A software change that is Class II otherwise shall not be classified Class I simply because an SCN will be required; rather, periodic (e.g., quarterly or semiannual) Class I record ECPs may be used to update the specification.

50.2.2 Class I, ECP types. Preliminary ECPs are as defined in this standard. A formal ECP shall contain sufficient description of the proposed change and its impact, including schedule and cost data. Definition of the proposed change provided with a formal ECP need not normally include exact changes in software product specification data to the degree that such data represents products of the total computer program change implementation process.

50.3 ECP form, page 1. (See Figure 2.) Listed in the following subparagraphs are the guidelines for preparing the required documentation.

50.3.1 Block 2. Class of ECP. Enter I or II.

50.3.2 Block 5. ECP designation. For computer programs, enter the CSCI identification number.

50.3.3 Block 8. Specification affected - test plan. If specifications or test plans cited in the contract are affected by the ECP, their identity by the CAGE code of the design activity, document number, revision letter and the SCN or NOR number of the SCN or NOR being submitted, shall be entered. Additionally, identification in this block shall include, at a minimum, all items listed on the contract data requirements list (CDRL) for the CSCI development contract, as well as previously delivered support and user manuals associated with the CSCI. This entry shall identify each data item affected by the proposed change, the nature of the effect, and any relevant impact on schedule or delivery of the data item. Supplemental page(s) may be used as necessary.

50.3.4 Block 9. Drawings affected. List drawings affected if applicable.

50.3.5 Block 14. In production. This block is not always applicable to CSCIs. If not applicable, so indicate.

50.3.6 Block 15. Lowest assembly affected. Enter the name(s) of the lowest computer software component(s) affected.

a. Part number. For software, enter the part number(s) for each affected lower level computer software component for the item(s) listed.

b. NSN. For software, enter the NSN or other identification number for each affected lower level computer software component for the items listed.

50.3.7 Block 18. Production effectivity by serial number. Identify, by CSCI version number, the version of the CSCI into which the change will be incorporated. Where applicable, the effectivity of the end item CI and vehicle (aircraft, tank, ship etc.) into which the capability represented by the new version of the software is proposed to be incorporated, shall also be provided. If the impact of the ECP merits the issuance of a new version of the CSCI, Block 18 of the ECP submittal shall also include a recommendation to this effect. Serial numbers may be used in lieu of version numbers upon agreement of the procuring activity.

50.3.8 Block 19. Effect on production delivery schedule. See 50.1.21 of Appendix A.

50.3.9 Block 20. Retrofit. This block shall apply to CSCIs if the CSCI change is part of a larger hardware or equipment change and incorporation of the CSCI change is per a hardware retrofit schedule; or, replacement of the prior version of the software is directed by MWO, TCTO, TD or similar modification instruction document. However, if the CSCI change is part of a larger hardware or equipment change and incorporation of the CSCI change is per a hardware retrofit schedule, that information will be included here either directly or by reference.

50.3.10 Block 21. Estimated costs/savings under contract. Enter a dollar estimate of cost impact of the ECP on the contract for the subject configuration item.

50.4 ECP form, page 2, effects on FCI/ACI. (See Figure 3.)

50.4.1 Block 29. Effects on employment, training, or operational effectiveness. The following information shall be entered as applicable to the phase of CSCI development/operation at the time of ECP submission:

a. identify any required changes to the data base parameters or values, or to data base management procedures;

b. identify and explain any anticipated effects of the proposed change on acceptable computer operating time and cycle time utilization;

c. provide an estimate of the net effect on computer program storage; and,

d. identify and explain any other relevant impact of the proposed change on utilization of the system.

50.4.2 Block 31, Development requirements and status. The contractor shall identify the scheduled sequence of computer program design/development/test activities which will be required. ECPs which are initiated following completion of preliminary design of the CSCI, or of the new version of CSCI, specific information shall be entered in this block to identify significant requirements for computer program redesign, reassembly, recompiling, recoding, retest, special installation, adaptation, checkout, or live environment testing, as applicable, and to identify the specific impact of these factors on existing schedules for completion of development. Changes to CSCI specification data and source code listings shall be included.

50.5 ECP form, page 3, effects on PCI. Specific items of information to be reported on ECP DD Form 1692-2 (see Figure 4), as specified in this standard, are either provided on DD Form 1692 and DD Form 1692-1 or do not apply to computer programs. Factors associated with the use and operation of CSCIs depend more directly on the level of the development specification rather than at the product configuration level. Factors in computer programming support are rarely affected by modifications in the item product configuration. In Block 39, the contractor shall provide information about the status of the software redesign and retesting effort. There shall also be a review of the intent of Blocks 37, 38, 42, 43, 44 and 46, to document CSCI impacts in these areas.

50.6 ECP form, page 4, estimated net total cost impact. This form (see Figure 5), shall not be used with ECPs to CSCIs. Net total cost estimates shall be based on all impact factors identified in the blocks of DD Form 1692 and entered in Block 21 of the ECP.

50.7 ECP form, page 5, cost savings summary. This form (see Figure 6), shall not apply in the case where all related ECPs being summarized refer to computer program changes only. When the related ECPs include changes to equipment items, the form shall be used in accordance with Appendix A.

50.8 ECP form, page 6, milestone chart. Milestone charts (see Figure 7), are required for CSCIs. The significant scheduling information associated with computer program changes is normally information relating to milestones in the change analysis/design/development/test process required in Block 31 of DD Form 1692-1. Scheduling information associated with computer program changes shall replace the five categories under CI. CSCI schedule items to be reported are: redesign, coding, debugging, preliminary qualification testing and formal qualification testing. Schedule information for CSCI changes shall be provided, listing significant milestones associated with the change, and representing events by the use of standard milestone chart symbols.

APPENDIX G

GUIDANCE FOR THE TAILORING OF MIL-STD-480B TO SPECIFIC PROGRAM REQUIREMENTS

10. GENERAL

10.1 Scope. This appendix identifies specific paragraphs in MIL-STD-480 that are most likely to be the source of excessive costs and provides guidance for possible tailoring of requirements. This appendix is to serve as a guide for the activity responsible in the preparation of contract requirements, and as such, shall not in itself form a part of the contract. It is not the intent of this appendix to tailor requirements to satisfy individual contractor desires. The guidelines contained herein implement the DoD policy issued under DoD Directive 5000.43 which require all DoD components to selectively apply and tailor military specifications and standards prior to their contractual imposition. Tailoring is a discipline to decrease requirements rather than to increase associated requirements by adding additional forms or methodologies.

10.2 Application. This appendix sets forth guidance for the elimination of counterproductive applications for MIL-STD-480 to specific program requirements.

20. APPLICABLE DOCUMENTS (See paragraph 2.)

30. DEFINITIONS

30.1 Definitions used in this appendix. For purposes of this appendix, the definitions contained in Section 3 of this standard shall apply.

40. GENERAL REQUIREMENTS

Not applicable

50. DETAILED REQUIREMENTS

50.1 Standardized requirements.

50.1.1 Application. The following paragraphs and subparagraphs of MIL-STD-480 have been identified as potential cost drivers. Their application to contracts should be tailored according to the detailed guidance of paragraph 50. to minimize their cost impact on programs.

50.1.2 Guidelines. Tailoring requirements apply to the following:

a. 1.4 (Application)

b. REFERENCED DOCUMENTS

c. Classification (of ECPs)

d. Engineering change justification

e. Class I ECP types

f. Class I engineering change priorities

g. Related engineering change-single prime

h. Support data

i. Class I compatibility engineering change

j. Class II engineering changes

k. Target for decision on Class I ECPs

50.2. Specific paragraph guidance. The following specific guidance is provided for tailoring the noted cost driver paragraphs in preparing contractual requirements for a program.

50.2.1 Application.

a. 1.4 (Application). For effective utilization of this standard, its application must be tailored to the program life cycle phase and the complexity of the CI. To be cost effective, it is essential to avoid premature or late establishment of baseline documentation.

50.2.2 Referenced documents. The documents referenced in MIL-STD-480, and the extent to which they are applicable, are as follows:

a. MIL-STD-109 (7.2.1(a), 7.2.2(a), 7.2.3(a), 8.2.1(b), 8.2.2(b), 8.2.3(a)) is cited to define minor, major and critical deviations and waivers.

b. MIL-STD-280 (Section 3 definitions para. 3.38.1) is applicable only for defining interchangeable, substitute and replacement items when determining the classifications.

c. MIL-STD-483 is applicable as a guide for processing computer software ECPs (Appendix F).

d. MIL-STD-882 (5.1.3.2) is applicable for formulating a system safety analysis that must be delivered with a code S (safety) justification.

e. MIL-STD-1388-1 is applicable only as a guide for general requirements and tasks descriptions governing performance of Logistics Support Analysis (LSA) during the life cycle of system and equipment.

f. MIL-STD-1388-2 is applicable only as a guide for improving the cost effectiveness of the generation, maintenance, acquisition and use of the technical data required to support and Integrated Logistic Support (ILS) program.

g. MIL-STD-1520 is applicable only to the extent that the instructions contained therein are to be utilized for delivery of materials and supplies to the Government which fail to conform to contractual requirements.

h. MIL-STD-1521 is applicable only to the extent that instructions contained therein be utilized for requirements of configuration audits.

i. MIL-STD-2167 shall be used to broaden the understanding in defense system software configuration control.

50.2.3 Classification (of ECPs). The following is guidance for cost effective application of Class I ECPs to baseline documentation during various life cycle phases:

a. Program initiation (conceptual phase). Configuration control during this phase is minimal, limited to the performance and functional parameters specified in the contract and should be applied by imposition of a baseline which identifies the minimum essential functional characteristics and primary interfaces.

b. Demonstration/validation phase. Class I ECP control shall be applied to the functional and allocated baseline requirements.

c. Full scale engineering development. Class I ECP control shall be applied to the functional and allocated baseline requirements with control of the allocated baseline requirements subject to tailoring as follows:

50.2.3.1 Previously developed CIs. Previously developed CIs, e.g., GFE and CFE, may be identified in the allocated baseline, but controlled by the application of MIL-STD-480 to the product baseline.

50.2.3.2 Allocated baseline(s). If established, should be flexible to avoid premature commitments to specific detailed performance requirements and resultant ECP costs to effect a change. Cost effective application of

Class I ECP control may be accomplished by incremental approval of the allocated baseline documentation; e.g., establishment of an "initial" allocated baseline with top level or key CI specifications. The remaining CI specifications required for the program are provided for Government review and concurrence, but are not incorporated in the allocated baseline (approved) until the specific detailed performance requirements have been defined and Government concurrence is provided. Prior to incorporation in the allocated baseline while Government review is in progress, these proposed specifications are maintained under contractor change control in lieu of formal Government control with Class I ECPs. The Government will be provided copies of all changes to these CI specifications if defined in the contract and may, on an exception basis, require the contractor to provide justification for changes.

50.2.3.3 Certain specifications. Factors identified in MIL-STD-480, which pertain only to product baseline documentation should not be imposed during full scale development, since this results in a level of control on contractor documentation not appropriate to functional or allocated baseline control. Contractor source control specifications, may be required for Government visibility during full scale development. Such specifications may be exempted from Class I control and from incorporation in the allocated and product baselines. Government visibility of changes may be as described previously in the paragraph above.

50.2.3.4 Certain conditions. Program requirements may dictate the incorporation of a CI specification in the allocated baseline prior to the time that all required information is available or has been defined to the degree desired for allocated baseline control. The Government and contractor may contractually recognize this situation and provide for the addition of the initially missing information. The specific method; e.g., SCN and added pages, should be identified in the contract.

50.2.3.5 Production/deployment phase. The product baseline should not normally be established before changes resulting from development testing and production/manufacture testing, e.g., first article, have been incorporated.

50.2.3.6 Class I ECP control. It should be imposed down to the lowest level at which the CI will be repaired or maintained.

50.2.3.7 CSCIs. The configuration control over CSCIs may introduce a series of documentation terms and change control classification factors which differ from those in this appendix and in Appendix F of MIL-STD-480. In such case, the standard should be tailored to clearly define which documents comprise which baseline and which factors control the classification of changes.

50.2.3.8 Engineering change justification. Use of the codes to justify engineering changes necessary to the Government (codes D, O, P & A) may

conflict with other contractual clauses, particularly in relation to other "deficiencies" clauses in the contract. Such other deficiencies clauses impose penalties on contractual financial arrangements; as a result, there may be a reluctance on the part of contractors to define ECPs that are corrections of deficiencies. This reluctance becomes significant where the changes deal with either safety and compatibility (Codes S and C), since they have the connotations reserved for mistakes, poor system engineering practices, etc., and fall under the general heading of "deficiencies". The penalties of the contractual deficiencies clause may cause avoidance of coding under MIL-STD-480 and result in a loss of desired effects the changes would bring. Through careful tailoring of this paragraph and the other deficiencies contractual clauses, the justification codes can be restored to their regular use without implying any wrong doing, penalties, etc., and the other contractual deficiencies clauses, to their contractually separate and intended purposes.

50.2.3.9 Preliminary and formal Class I ECPs. The principal difference between preliminary and formal ECP is the availability of information necessary to define the complete scope and effect of a given Class I change. In the case of a preliminary Class I ECP, the exact content desired is deliberately left open but is considered to be less than that of a formal ECP. As a result, much is left open to subjective judgement and preliminary ECPs have in the past gradually grown in content, cost to prepare, and time required for preparation and review. In the event such proposed changes are subsequently considered to be unnecessary or undesirable to the Government, such effort (to prepare the preliminary ECPs) have been considered as a cost driving aspect of this standard.

50.2.3.9.1 Expeditious and least cost. Where possible, Government components and contractors should consider tailoring the requirements of paragraph 5.1.4.1.1 to allow for an expeditious and least cost approach to determine whether preparation and submission of a formal ECP is necessary. Consideration should be given to the use of an Advance Change Study Notice, MIL-STD-483, DI-E-3127, in lieu of a preliminary ECP.

50.2.4 Class I engineering change priorities. Tailoring activities in this area should be carefully reviewed to assure full awareness of the impact which deletion or limitation of a specific priority code can have on Government options in the change control area. Specifically, some contracts have attempted to restrict the availability of both "Urgent" and "Emergency" priority codes to certain ECP justification code categories; e.g., allowing all 3 priority codes (Emergency, Urgent, and Routine) to be applied only to those ECPs bearing an "O" - operational or logistics support justification code, with a corresponding limitation of all other ECPs to a Routine status only. This practice can deny the Government the advantages of reduced cost which could result from the expeditious review and approval of Class I ECPs in the justification codes, P - production stoppage, or R - cost reduction. Also some contracts have deleted

subparagraphs 5.1.5.2(c) (d) and (e) from usage within the "Urgent" priority code. This can have the same effect as precluding Code P, Code B, Code V, and Code R justified Class I engineering changes from any but "Routine" handling by the Government. Those responsible for tailoring must remain alert to and aware of the cost driving results which a contract limited to "Routine" priority designation can produce.

50.2.5 Related engineering changes - single prime. Relatively simple changes to several related CIs (e.g., similar specification wording changes for a top-level and several lower-level CIs) under a single contractor or Government control may be submitted and approved as a single ECP, unless it is not technically feasible because of the impact on other CIs or for reasons of procuring activity organization & funding structure.

50.2.6 Supporting data. The extent of supporting data to be submitted with an ECP should be limited to that which are necessary to understand and evaluate the ECP. Sketches and test results, in lieu of drawings, may suffice in some instances.

50.2.7 Class I compatibility engineering change. This paragraph of MIL-STD-480, should be reviewed carefully, and tailored appropriately in requests for procurement/contractual applications to avoid potential abuses which may occur due to misinterpretation and, which can contribute to costly results not in keeping with other facets of configuration management precepts. Specifically, this paragraph allows for the immediate implementation of a proposed Class I engineering change which is coded C (and which truly meets the criteria defined for such a justification code as defined in paragraphs 5.1.3.3 (a) and (b) and (c)), for all configuration items situated in the location at which the necessity for the change was discovered. Compatibility changes are deficiencies discovered during installation and checkout, on the first units. Use of the C code could result in costly efforts, should the proposed change subsequently be disapproved as presented or should an alternative method of correcting the deficiency be decided upon. In such event, the most immediate result would be a configuration differing significantly from that of other CIs of a like identity previously delivered or those subsequently delivered. To preclude costly reaccomplishment of compatibility changes subsequent to the development of additional information relative to the need for change, contracts may be tailored to provide for timely Government review and concurrence of planned contractor actions. One method of providing for the pre-implementation review is the contractual establishment of a 5 work day period for Government review and response prior to contractor implementation.

50.2.8 Class II engineering changes. Paragraph 5.2 of this standard may be tailored to utilize contractor format.

50.2.9 Target for decision on Class I ECPs. Processing schedules for Class I ECPs will be tailored to minimize the turnaround time to the originator recognizing the program/system complexity within the delegated authority of the cognizant program/project/ product manager. The schedules established should consider the impact on effectivities, delivery of hardware and ECP pricing when turn around time is excessive.

CONCLUDING MATERIAL

Custodians:
Army - AR
Navy - AS
Air Force - 10

Preparing activity:
Navy - AS

Review activities:
Army - AL, AM, AT, AV, CR, EA, ER, GL, MD, ME, MI, SC, SM, TM
Navy - EC, MC, NM, OS, SH, YD,
Air Force - 11, 26
DLA - DH
DOD - DC, DO, DS, NS

(Project CMAN-0016)

User activities:
Army - CE, MR, TE
Navy - CG, OS, SH, YD
Air Force - 19

Civil Agency Coordinating Activities:
EIA
AIA

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(See Instructions – Reverse Side)

1. DOCUMENT NUMBER	2. DOCUMENT TITLE

3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION
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b. ADDRESS *(Street, City, State, ZIP Code)*	☐ USER
	☐ MANUFACTURER
	☐ OTHER *(Specify):* _____

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional	b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional
c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional	8. DATE OF SUBMISSION *(YYMMDD)*

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